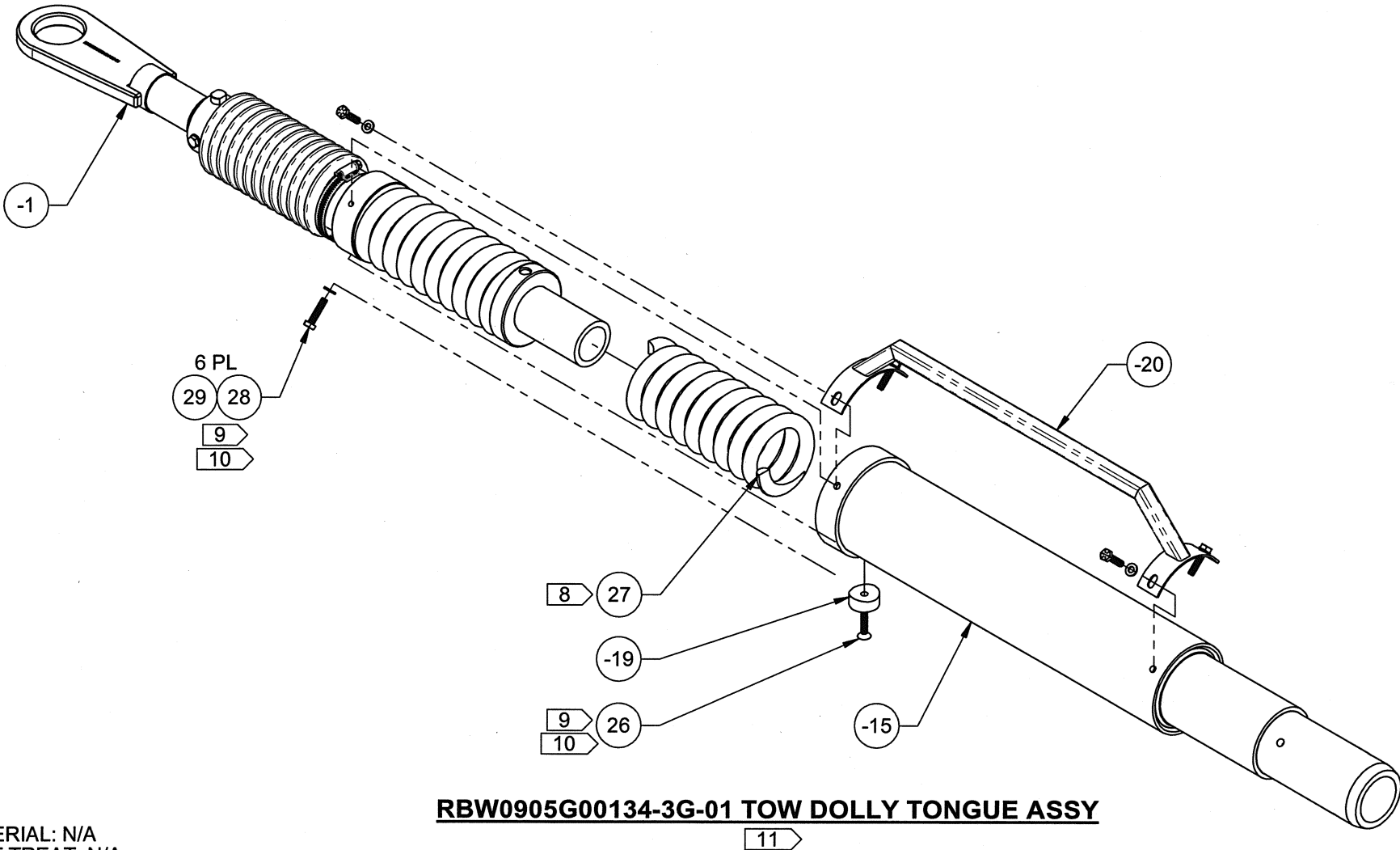
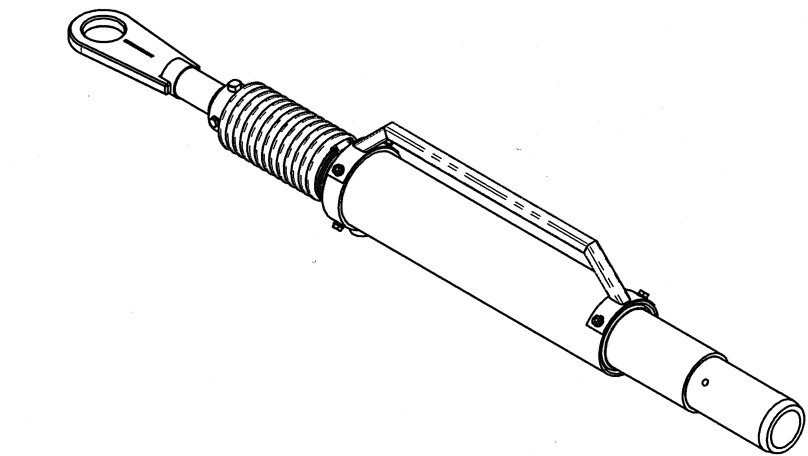



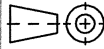
ITEM #	QTY	PART #	PART TITLE
-1	1	RBW0905G00134-3G-01-1	SPRING SECTION ASSY
-15	1	RBW0905G00134-3G-01-15	SPRING COVER ASSY
-19	1	RBW0905G00134-3G-01-19	STOP
-20	1	RBW0905G00134-3G-01-20	HANDLE ASSY
26	1	McMaster#91263A178 OR EQUIV	STEEL ZINC PLATED HEX GRIVE FLAT HEAD SCREW 1/4"-28 X 1-1/4" LG.
27	1	CENTURY SPRING #73358 OR EQUIV	WIRE MUSIC COMPRESSION SPRING 0.594" WIRE DIA. OIL TEMP ASTM A229 CLII, 3.406" OD. X 8.000" LG. CLOSE & GROUND ENDS
28	6	McMaster#92620A701 OR EQUIV.	STEEL GRADE 8 HEX HEAD SCREW 1/4"-28 X 1-1/8" LG.
29	6	NAS1149F0463P	STEEL WASHER 0.265" ID. X 0.500" OD. X 0.063" THK.



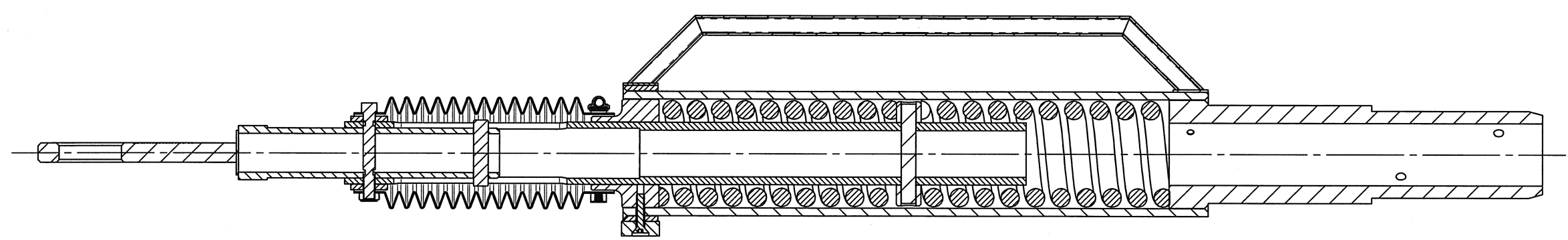
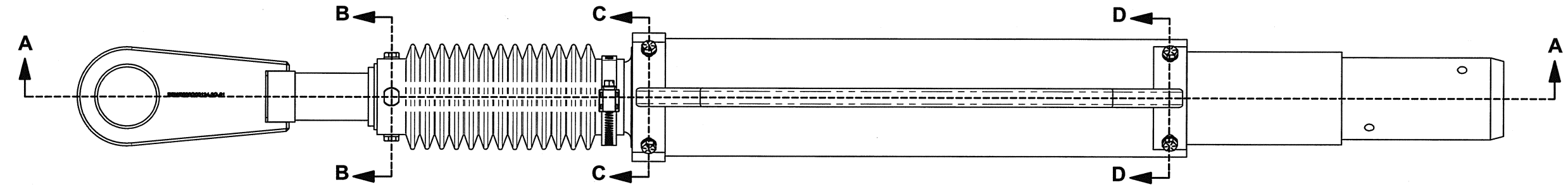
NOTES:  
1) MATERIAL: N/A  
2) HEAT TREAT: N/A  
3) FINISH: N/A  
4) TOLERANCES: X.X = +/- 0.1" / +/- 1°  
X.XX = +/- 0.01" / +/- 0.5°  
X.XXX = +/- 0.005" / +/- 0.1°  
X.XXXX = +/- 0.0005" / +/- 0.05°  
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"  
5) UNITS: INCHES UNLESS OTHERWISE NOTED  
6) IDENTIFICATION: N/A  
7) ASSEMBLE AS SHOWN  
8) COMPRESS ITEM 27 TO ASSEMBLE ITEM -15  
9) APPLY RED THREADLOCKER LOCTITE 263/262 ON THREADS OF ITEMS 28 AND 26  
THEN ASSEMBLE WITH ITEMS -15, -20, -1 AND -19 AND REMOVE EXCESS  
10) INSTALL ITEMS 28 AND ITEM 26 HAND TIGHT  
11) THE TOOL ASSY MUST BE PACKAGED WITH A DESICCANT BAG INTO A TIGHT FITTING SEALED PLASTIC BAG



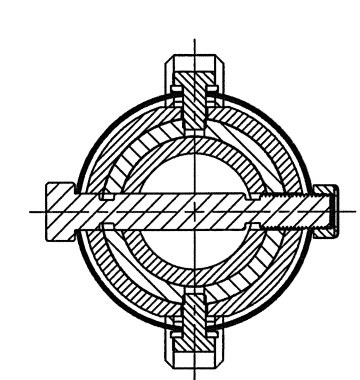
SEE ATTACHED DEVIATION

H	SEE PREVIOUS PDFs FOR OLDER REV ITEM -1 NOTE FOR LPS3 ADDED ITEM -2 FINISH ZINC PLATED CHANGED FOR BLACK OXIDE ITEM -3 MATERIAL A513 DOM TUBING CHANGED FOR 4140 (28-32 RC) ITEM -4 MATERIAL 4130 CHANGED FOR 4140 (28-32 RC) ITEM -5 MATERIAL 4130 CHANGED FOR 4140 (28-32 RC) ITEM -6 FINISH ZINC PLATED CHANGED FOR BLACK OXIDE ITEM -7 MATERIAL 4130 CHANGED FOR 4140 (28-32 RC), FINISH ZINC PLATE TYPE 1 CHANGED FOR ZINC PLATE TYPE 2 ITEM -8 FINISH ZINC PLATE TYPE 1 CHANGED FOR ZINC PLATE TYPE 2 ITEM -9 FINISH ZINC PLATE CHANGED FOR BLACK OXIDE ITEM -11 MATERIAL A513 DOM TUBING CHANGED FOR 4140 (28-32 RC) ITEM -13 MATERIAL 4130 CHANGED FOR 4140 (28-32 RC) ITEM -15 FINISH ZINC PLATE CHANGED FOR POWDER COAT YELLOW ITEM -16 MATERIAL A513 DOM TUBING CHANGED FOR 7075 ITEM -18 MATERIAL 4130 CHANGED FOR 7075 ITEM -20 FINISH ZINC PLATE CHANGED FOR POWDER COAT YELLOW	19-631	VM
	REV.		
DESIGN	VM	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	VM		
CHECKED	VM	TOOL PART #	REV H
MFG. APPR.	DP	RBW0905G00134-3G-01	SHEET 1 OF 27
APPROVED			
DATE	3/18/2019	TITLE	SCALE
		TOW DOLLY TONGUE ASSY	NTS 
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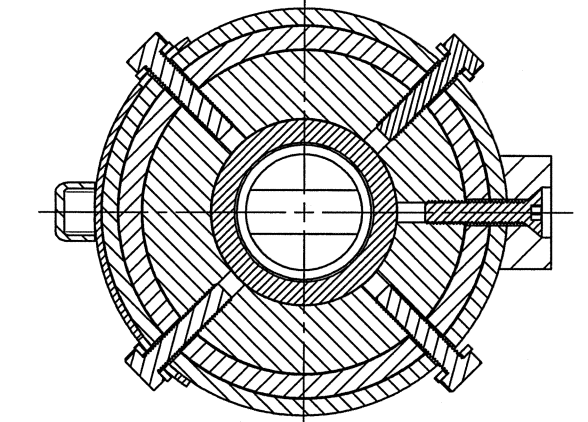
8 7 6 5 4 3 2 1



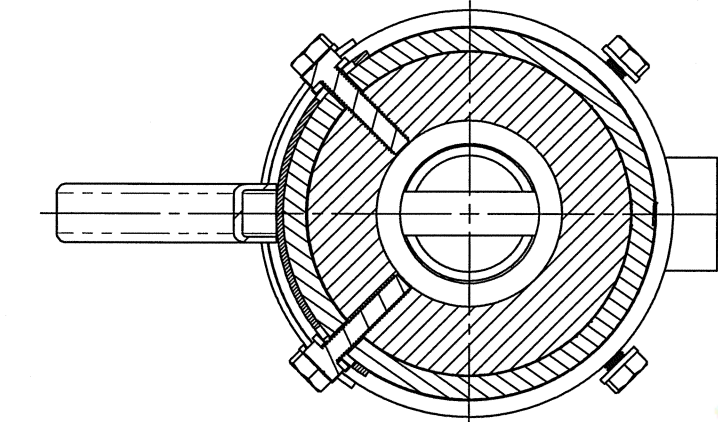
**SECTION A-A**



**SECTION B-B**





**SECTION C-C**



**SECTION D-D**

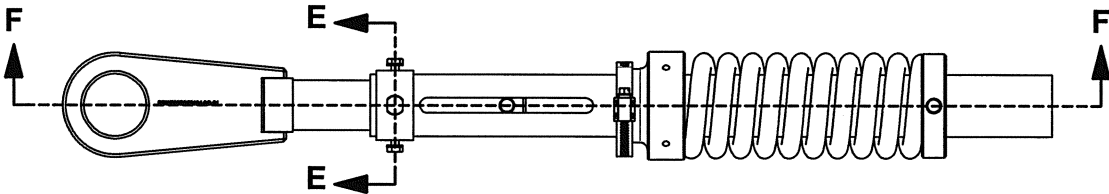
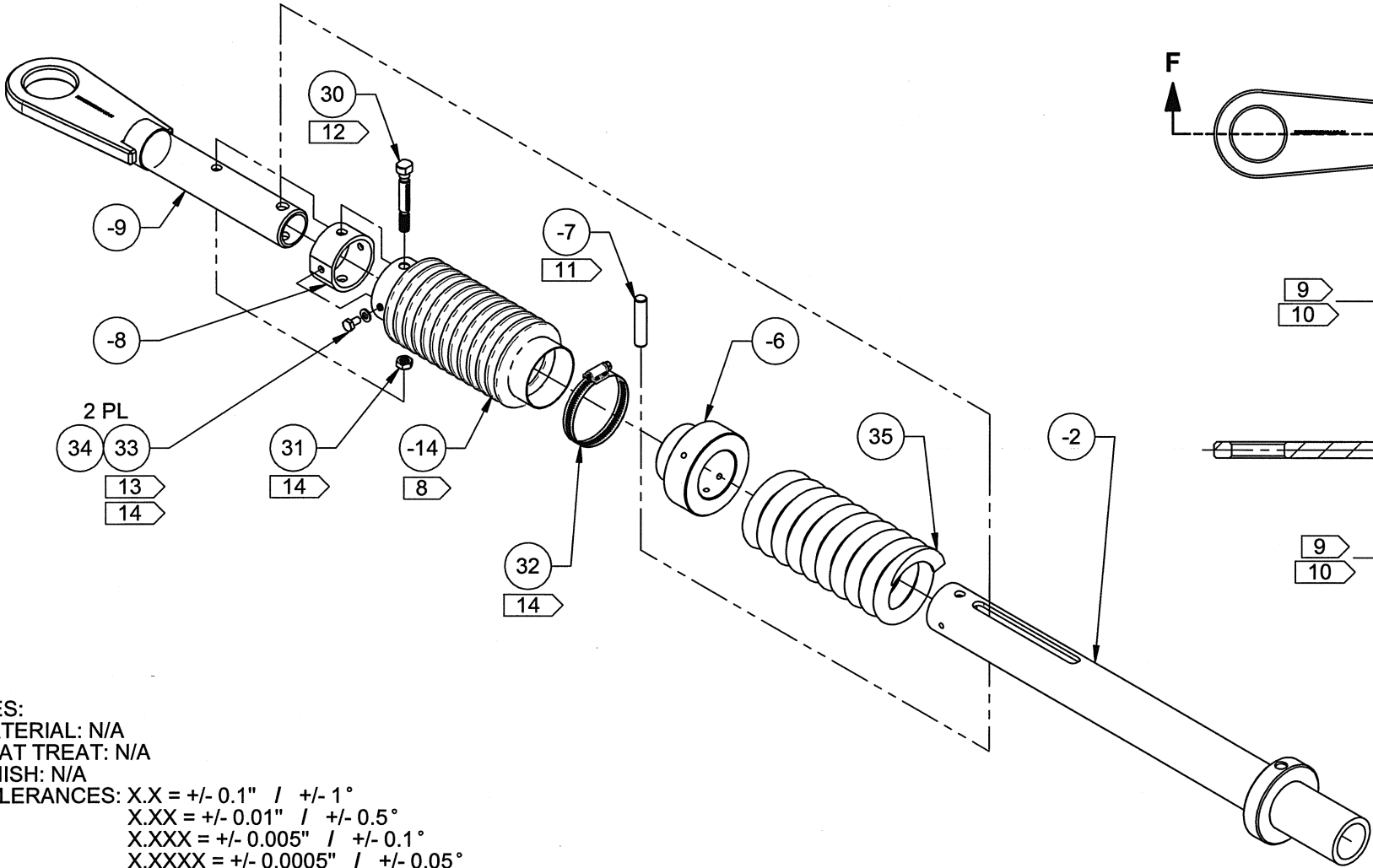
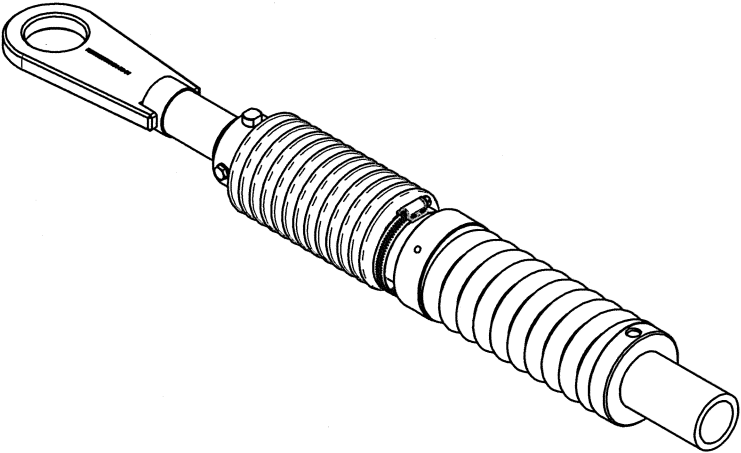
**SEE ATTACHED DEVIATION**

DESIGN	VM	<b>DART AEROSPACE LTD</b>	
DRAWN	VM	HAWKESBURY, ONTARIO, CANADA	
CHECKED	VM	TOOL PART #	REV H
MFG. APPR.	DP	RBW0905G00134-3G-01	SHEET 2 OF 27
APPROVED		TITLE	SCALE
		TOW DOLLY TONGUE ASSY	NTS 
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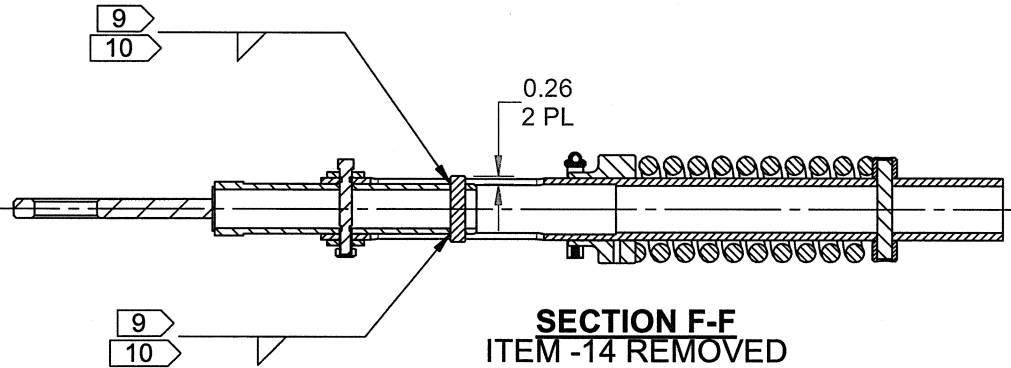
8 7 6 5 4 3 2 1



ITEM #	QTY	PART #	PART TITLE
-2	1	RBW0905G00134-3G-01-2	GUIDE ASSY
-6	1	RBW0905G00134-3G-01-6	SPRING FRONT STOP
-7	1	RBW0905G00134-3G-01-7	SLIDE PIN
-8	1	RBW0905G00134-3G-01-8	FRONT COLLAR
-9	1	RBW0905G00134-3G-01-9	TONGUE ASSY
-14	1	RBW0905G00134-3G-01-14	C.V. BOOT
30	1	RBW0905G01652-3G	TONGUE SHEAR BOLT
31	1	McMaster#94945A218 OR EQUIV	STEEL GRADE 8 ZINC YELLOW-CHROMATE PLATED THIN NYLON-INSERT LOCKNUT 3/8"-24
32	1	McMaster#5415K220 OR EQUIV	SS301 WORM-DRIVE CLAMPS 1/2" WIDE BAND X 2-1/16" TO 3" CLAMP ID
33	2	AN4-3A	BOLT
34	2	NAS1149F0463P	STEEL WASHER 0.265" ID. X 0.500" OD. X 0.063" THK.
35	1	CENTURY SPRING #73358 OR EQUIV	WIRE MUSIC COMPRESSION SPRING 0.594" WIRE DIA. OIL TEMP ASTM A229 CLII, 3.406" OD. X 8.000" LG. CLOSE & GROUND ENDS



SECTION E-E


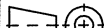


SECTION F-F  
ITEM -14 REMOVED  
FOR CLARITY

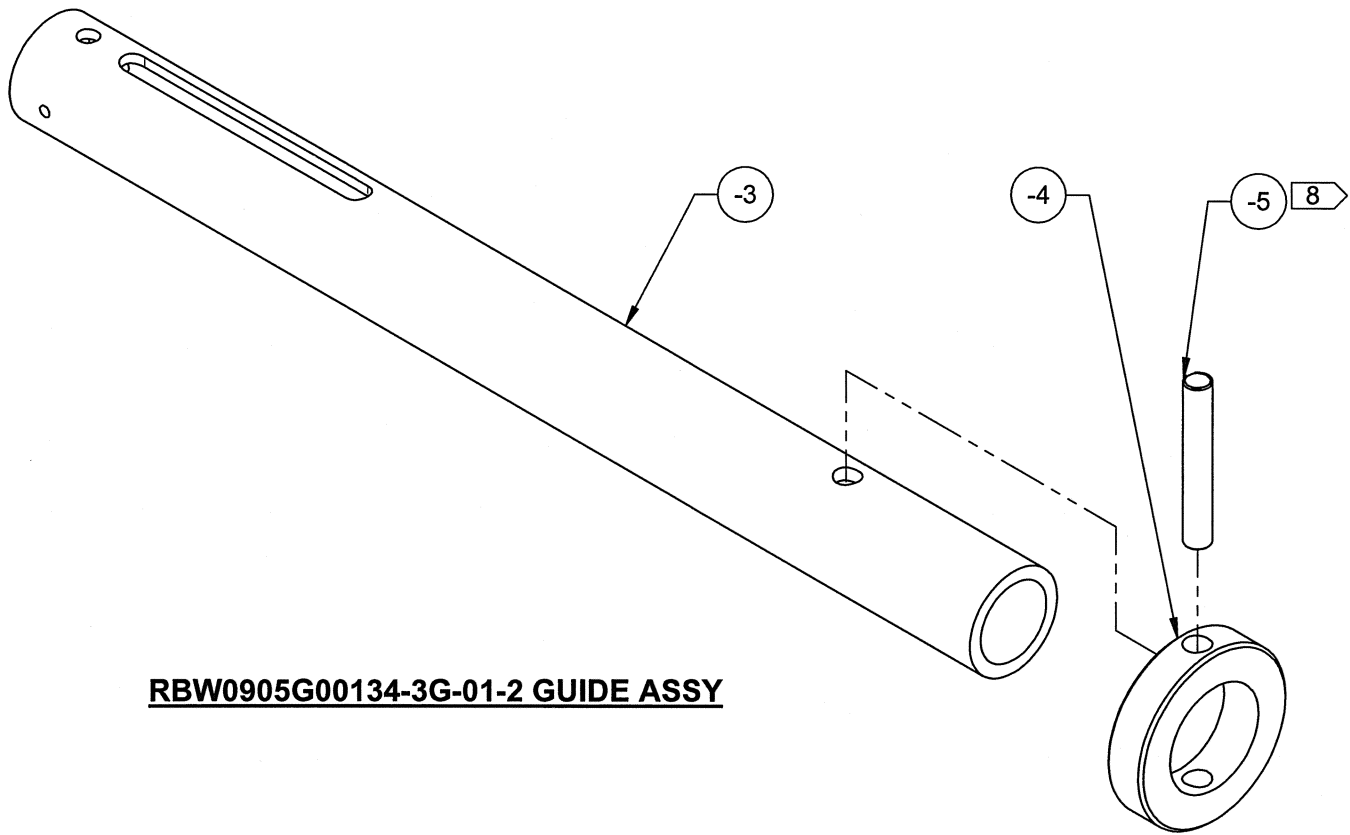
RBW0905G00134-3G-01-1 SPRING SECTION ASSY

SEE ATTACHED DEVIATION

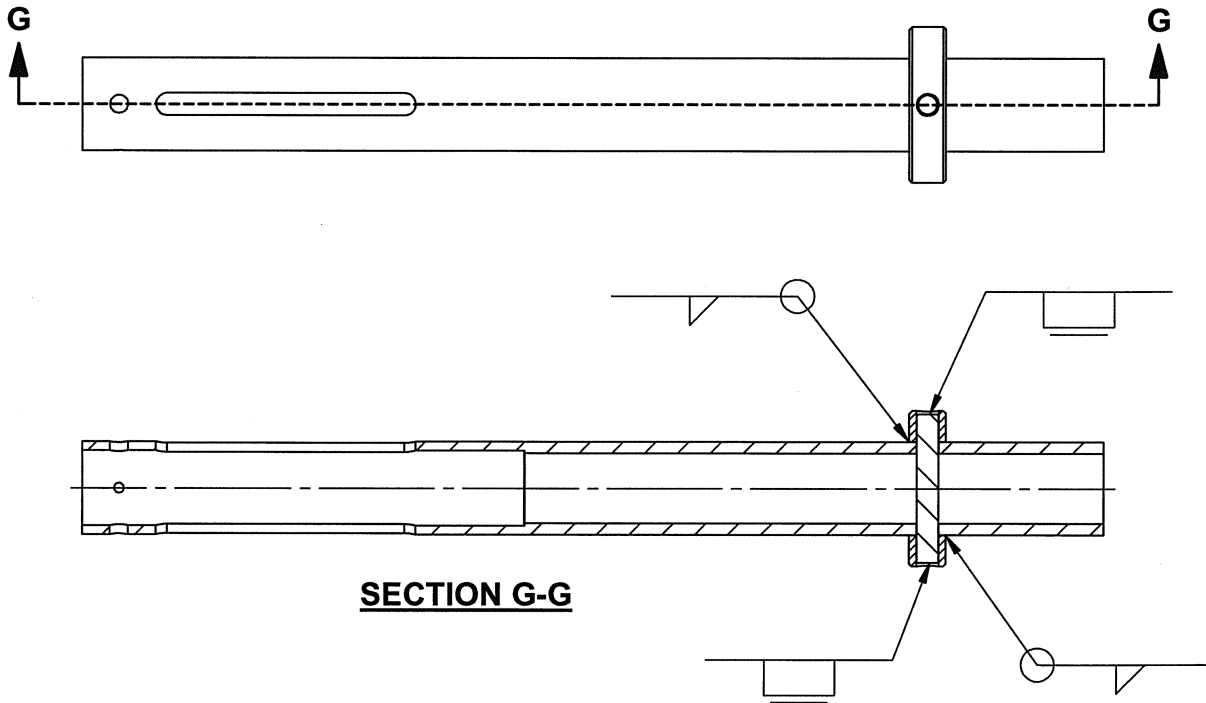
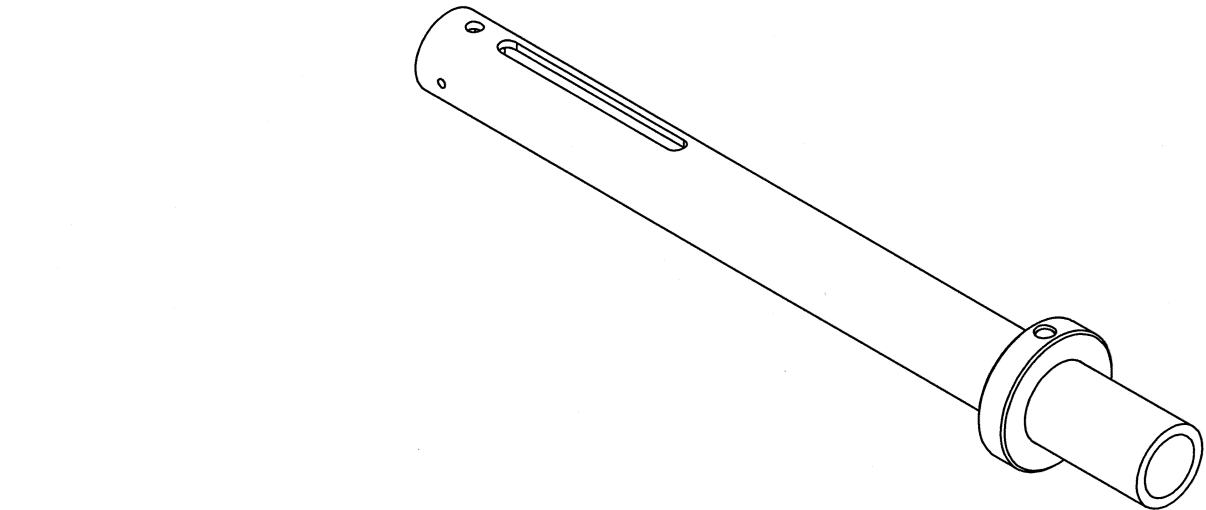
- NOTES:
- 1) MATERIAL: N/A
  - 2) HEAT TREAT: N/A
  - 3) FINISH: N/A
  - 4) TOLERANCES: X.X = +/- 0.1" / +/- 1°  
X.XX = +/- 0.01" / +/- 0.5°  
X.XXX = +/- 0.005" / +/- 0.1°  
X.XXXX = +/- 0.0005" / +/- 0.05°  
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/- 0.005"
  - 5) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 6) IDENTIFICATION: N/A
  - 7) ASSEMBLE AS SHOWN
  - 8) ASSEMBLE ITEM -14 WITH ITEMS 30, 31, 34 AND 33 TO ITEMS -8 AND -9, THEN COMPRESS ITEM -14 TEMPORARILY TO ALLOW CLEARANCE FOR WELDING ITEM -7 WITH ITEM -9
  - 9) TACK WELD ITEM -7 WITH ITEM -9 TOP AND BOTTOM AS SHOWN, ITEM -9 MUST SLIDE FREELY INTO ITEM -2
  - 10) REMOVE WELD SPATTERS
  - 11) APPLY LPS3 ONTO ITEM -7 AFTER WELDING
  - 12) APPLY RED THREADLOCKER LOCTITE 263/262 ON THREADS OF ITEM 30 THEN ASSEMBLE WITH ITEM 31, AND REMOVE EXCESS
  - 13) APPLY RED THREADLOCKER LOCTITE 263/262 ON THREADS OF ITEMS 33 THEN ASSEMBLE WITH ITEM -8, AND REMOVE EXCESS
  - 14) INSTALL ITEMS 31, 32 AND 33 HAND TIGHT

DESIGN	VM	DART AEROSPACE LTD	
DRAWN	VM	HAWKESBURY, ONTARIO, CANADA	
CHECKED	VM	TOOL PART #	REV H
MFG. APPR.	DP	RBW0905G00134-3G-01	SHEET 3 OF 27
APPROVED		TITLE	SCALE
		TOW DOLLY TONGUE ASSY	NTS 
DATE	3/18/2019	COPYRIGHT © 2019 BY DART AEROSPACE LTD	
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ITEM #	QTY	PART #	PART TITLE
-3	1	RBW0905G00134-3G-01-3	DRAW TUBE
-4	1	RBW0905G00134-3G-01-4	SPRING CENTER STOP
-5	1	RBW0905G00134-3G-01-5	CENTER STOP PIN



**RBW0905G00134-3G-01-2 GUIDE ASSY**



**SECTION G-G**

**SEE ATTACHED DEVIATION**

NOTES:  
1) MATERIAL: N/A  
2) HEAT TREAT: N/A  
3) FINISH: BLACK OXIDE PER MIL-C-13924 CLASS 1 THEN APPLY A THIN LAYER OF OIL / CPC PER MIL-PRF-16173 GRADE 3 CLASS 1 OR MIL-C-81309 TYPE III OR MIL-C-23411A OR MIL-PRF-81309 AND WIPE OFF EXCESS  
4) TOLERANCES: X.X = +/- 0.1" / +/- 1°  
X.XX = +/- 0.01" / +/- 0.5°  
X.XXX = +/- 0.005" / +/- 0.1°  
X.XXXX = +/- 0.0005" / +/- 0.05°  
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"  
5) UNITS: INCHES UNLESS OTHERWISE NOTED  
6) IDENTIFICATION: N/A  
7) ASSEMBLE AS SHOWN  
8) ASSEMBLE ITEM -5 CENTERED WITH ITEM -4  
9) REMOVE ALL WELD SPATTERS

DESIGN	VM	<b>DART AEROSPACE LTD</b>	
DRAWN	VM	HAWKESBURY, ONTARIO, CANADA	
CHECKED	VM	TOOL PART #	REV H
MFG. APPR.	DP	RBW0905G00134-3G-01	SHEET 4 OF 27
APPROVED	VP	TITLE	SCALE
		<b>TOW DOLLY TONGUE ASSY</b>	NTS
DATE	3/18/2019	COPYRIGHT © 2019 BY DART AEROSPACE LTD	
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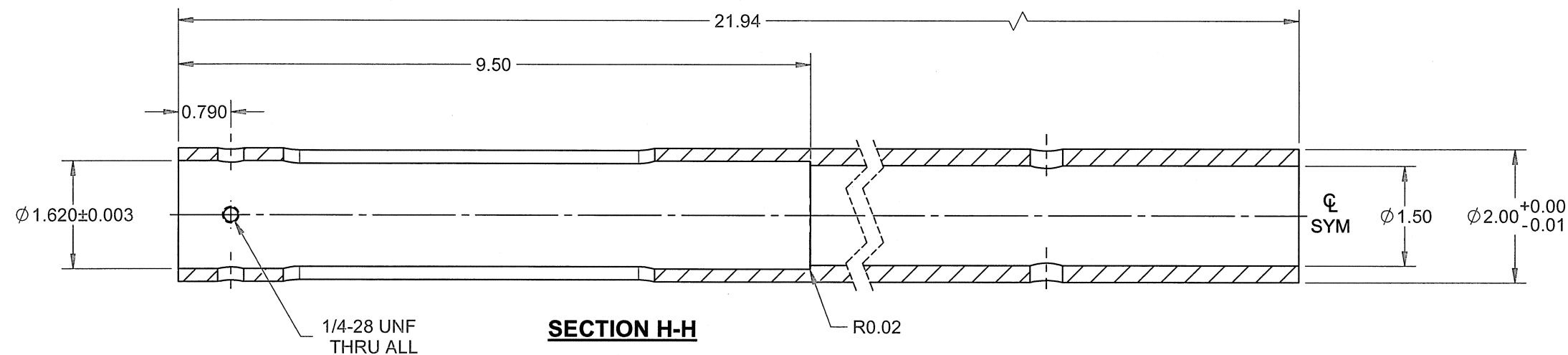
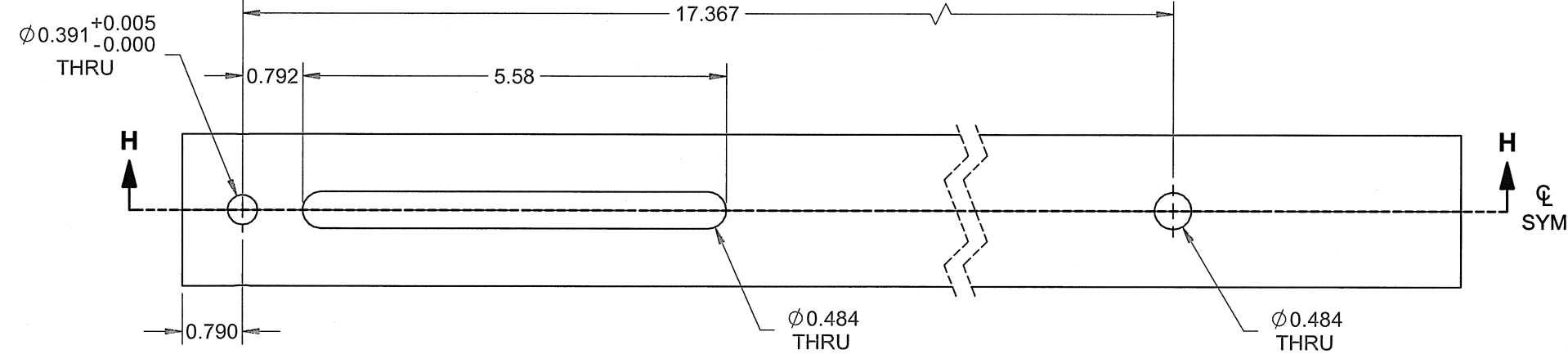
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**RBW0905G00134-3G-01-3 DRAW TUBE****SEE ATTACHED DEVIATION****NOTES:**

- 1) MATERIAL: 4140 (28-32 RC)
- 2) HEAT TREAT: N/A
- 3) FINISH: N/A
- 4) TOLERANCES: X.X =  $\pm 0.1"$  /  $\pm 1^\circ$   
X.XX =  $\pm 0.01"$  /  $\pm 0.5^\circ$   
X.XXX =  $\pm 0.005"$  /  $\pm 0.1^\circ$   
X.XXXX =  $\pm 0.0005"$  /  $\pm 0.05^\circ$   
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES =  $\pm 0.005"$
- 5) UNITS: INCHES UNLESS OTHERWISE NOTED
- 6) REMOVE ALL SHARP EDGES AND BURRS
- 7) IDENTIFICATION: N/A

DESIGN	VM	<b>DART AEROSPACE LTD</b>	
DRAWN	VM	HAWKESBURY, ONTARIO, CANADA	
CHECKED	VM	TOOL PART #	REV H
MFG. APPR.	DP	RBW0905G00134-3G-01	SHEET 5 OF 27
APPROVED	W	TITLE	SCALE
DATE	3/18/2019	TOW DOLLY TONGUE ASSY	NTS
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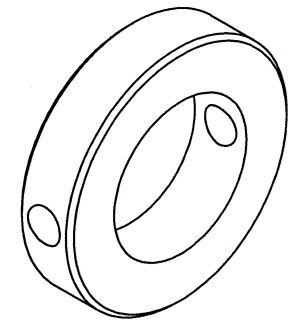
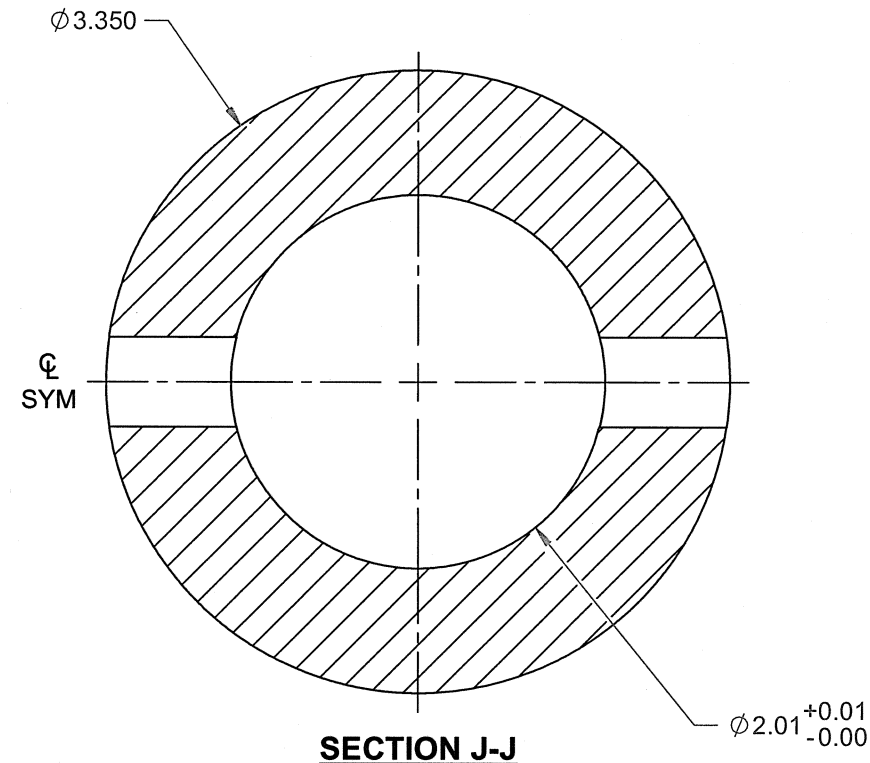
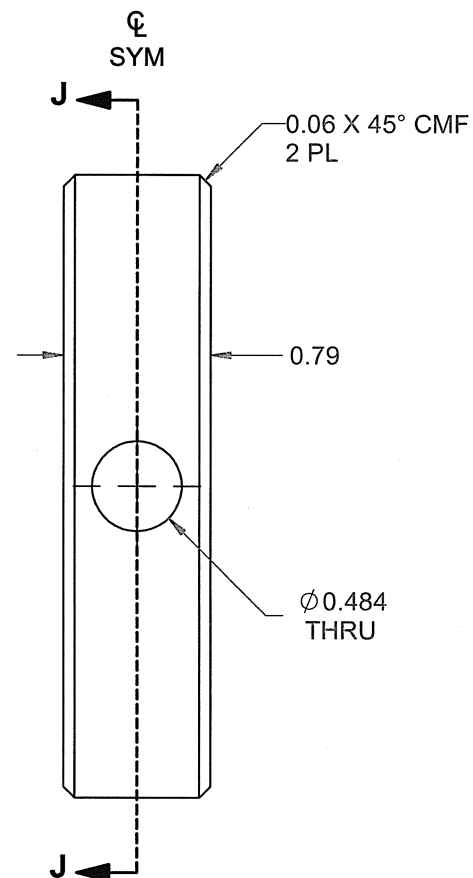
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**RBW0905G00134-3G-01-4 SPRING CENTER STOP**

**NOTES:**

1) MATERIAL: 4140 (28-32 RC)

2) HEAT TREAT: N/A

3) FINISH: N/A

4) TOLERANCES: X.X = +/- 0.1" / +/- 1°

X.XX = +/- 0.01" / +/- 0.5°

X.XXX = +/- 0.005" / +/- 0.1°

X.XXXX = +/- 0.0005" / +/- 0.05°

PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/- 0.005"

5) UNITS: INCHES UNLESS OTHERWISE NOTED

6) REMOVE ALL SHARP EDGES AND BURRS

7) IDENTIFICATION: N/A

**SEE ATTACHED DEVIATION**

DESIGN	VM	<b>DART AEROSPACE LTD</b>	
DRAWN	VM	HAWKESBURY, ONTARIO, CANADA	
CHECKED	VM	TOOL PART #	REV H
MFG. APPR.	DP	RBW0905G00134-3G-01	SHEET 6 OF 27
APPROVED	Wp	TITLE	SCALE
DATE	3/18/2019	TOW DOLLY TONGUE ASSY	NTS
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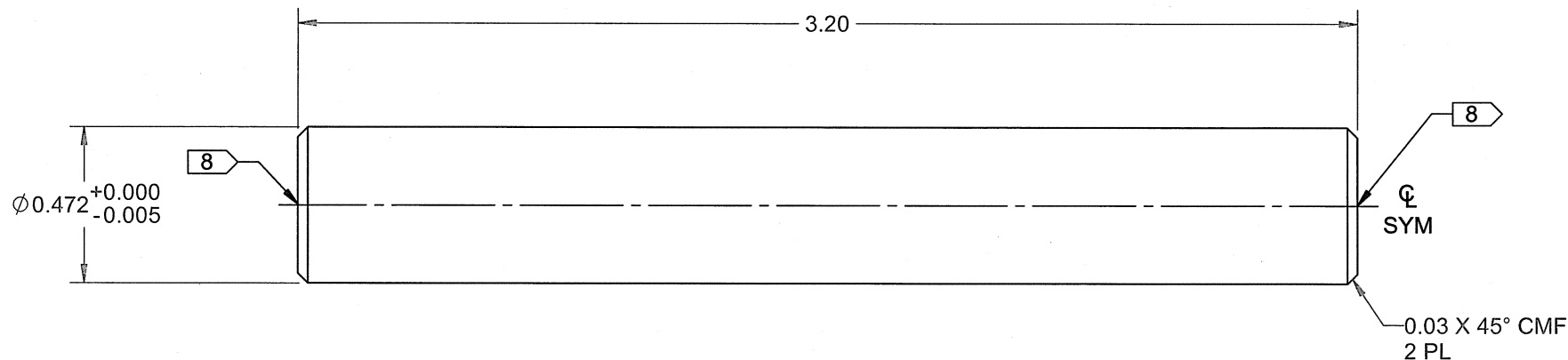
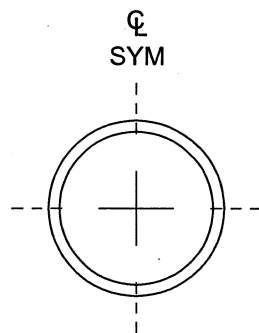
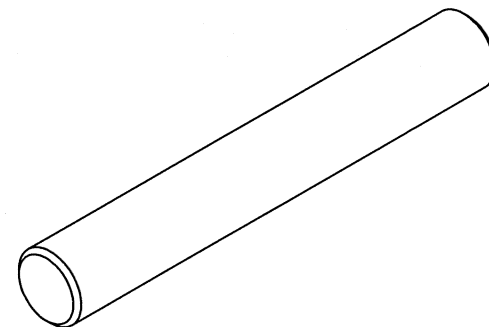
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**RBW0905G00134-3G-01-5 CENTER STOP PIN**

**NOTES:**

1) MATERIAL: 4140 (28-32 RC)

2) HEAT TREAT: N/A

3) FINISH: N/A

4) TOLERANCES: X.X = +/- 0.1" / +/- 1°

X.XX = +/- 0.01" / +/- 0.5°

X.XXX = +/- 0.005" / +/- 0.1°

X.XXXX = +/- 0.0005" / +/- 0.05°

PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"

5) UNITS: INCHES UNLESS OTHERWISE NOTED

6) REMOVE ALL SHARP EDGES AND BURRS

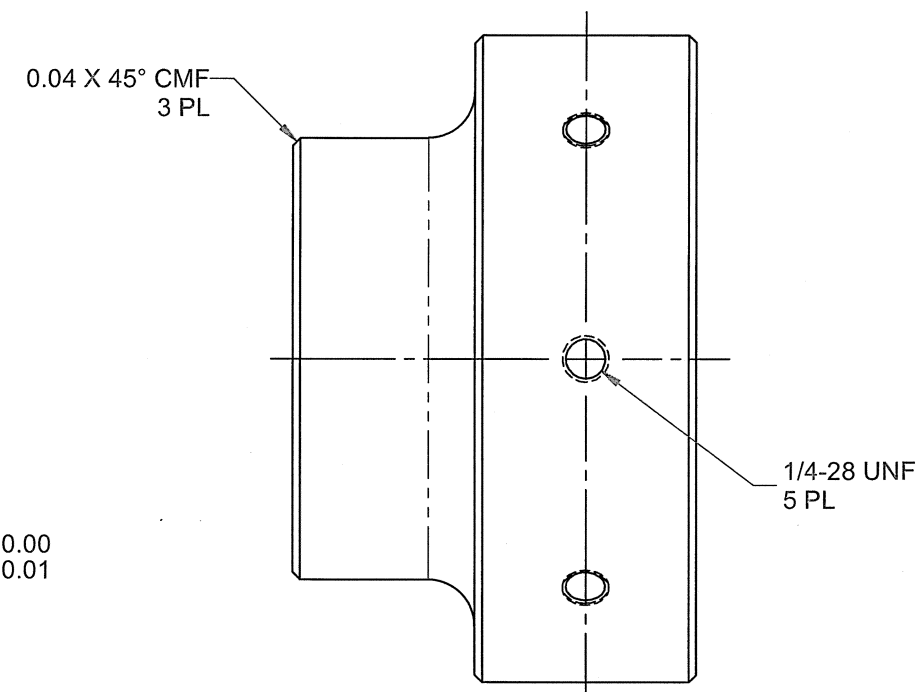
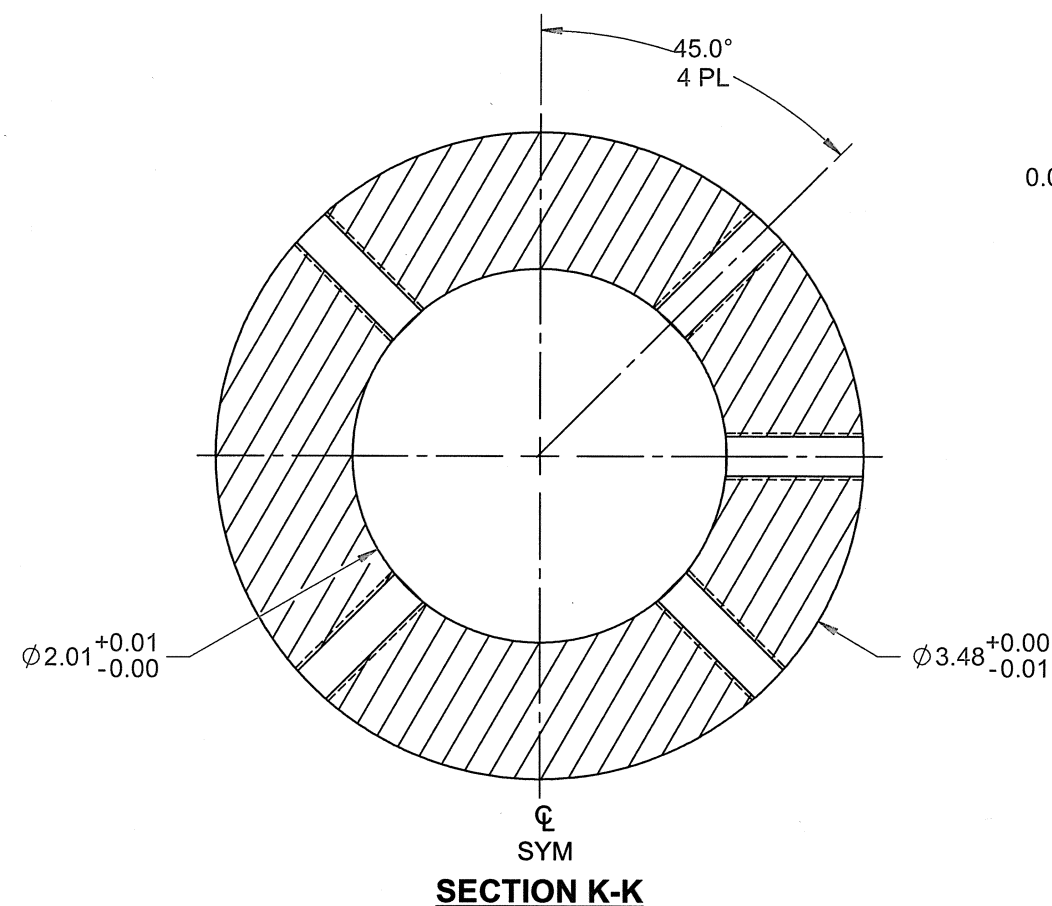
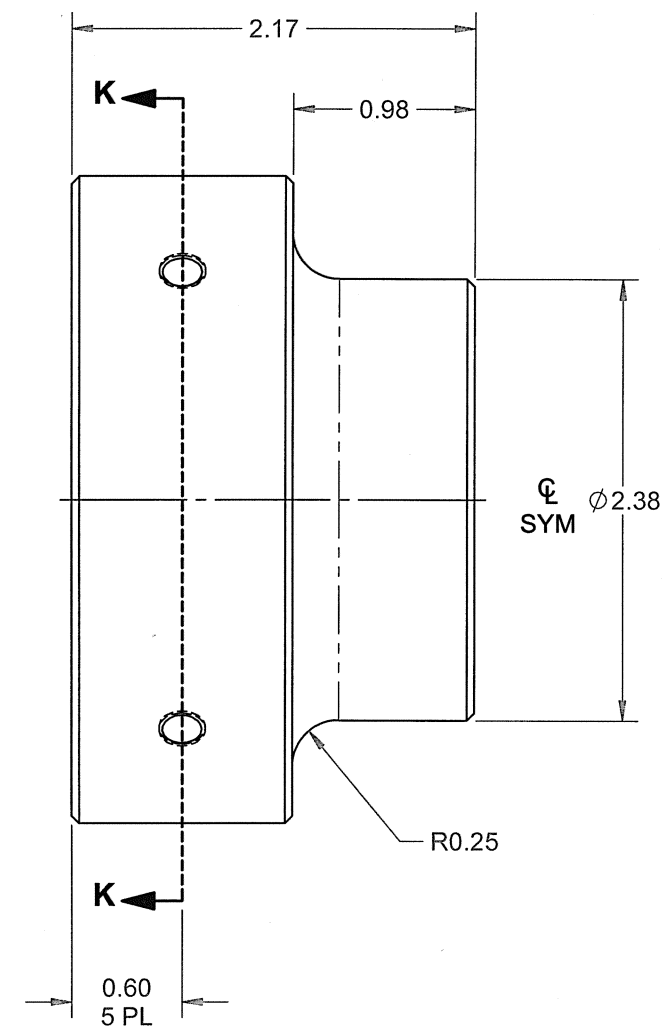
7) IDENTIFICATION: N/A

8) CENTER DRILL IS ACCEPTABLE

**SEE ATTACHED DEVIATION**

DESIGN	VM	<b>DART AEROSPACE LTD</b>	
DRAWN	VM	HAWKESBURY, ONTARIO, CANADA	
CHECKED	VM	TOOL PART #	REV H
MFG. APPR.	DP	RBW0905G00134-3G-01	SHEET 7 OF 27
APPROVED	<i>VKL</i>	TITLE	SCALE
DATE	3/18/2019	TOW DOLLY TONGUE ASSY	NTS
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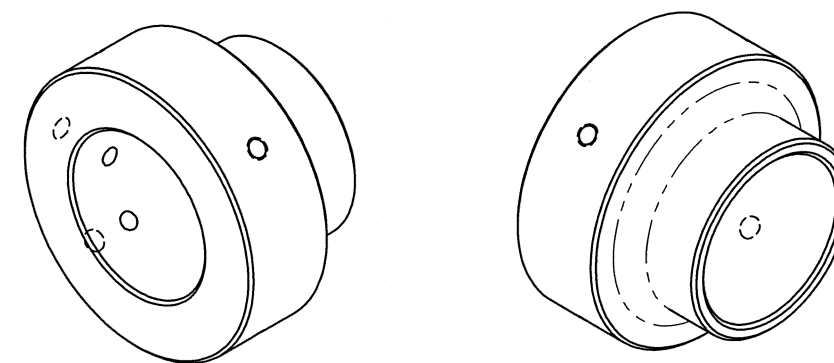
8 7 6 5 4 3 2 1



**RBW0905G00134-3G-01-6 SPRING FRONT STOP**

**NOTES:**

- 1) MATERIAL: 4140 (28-32 RC)
- 2) HEAT TREAT: N/A
- 3) FINISH: BLACK OXIDE PER MIL-C-13924 CLASS 1 THEN APPLY A THIN LAYER OF OIL / CPC PER MIL-PRF-16173 GRADE 3 CLASS 1 OR MIL-C-81309 TYPE III OR MIL-C-23411A OR MIL-PRF-81309 AND WIPE OFF EXCESS
- 4) TOLERANCES: X.X = +/- 0.1" / +/- 1°  
X.XX = +/- 0.01" / +/- 0.5°  
X.XXX = +/- 0.005" / +/- 0.1°  
X.XXXX = +/- 0.0005" / +/- 0.05°  
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"
- 5) UNITS: INCHES UNLESS OTHERWISE NOTED
- 6) REMOVE ALL SHARP EDGES AND BURRS
- 7) IDENTIFICATION: N/A



**SEE ATTACHED DEVIATION**

DESIGN	VM	<b>DART AEROSPACE LTD</b>	
DRAWN	VM	HAWKESBURY, ONTARIO, CANADA	
CHECKED	VM	TOOL PART #	REV H
MFG. APPR.	DP	RBW0905G00134-3G-01	SHEET 8 OF 2
APPROVED	VM	TITLE	SCALE
		TOW DOLLY TONGUE ASSY	NTS
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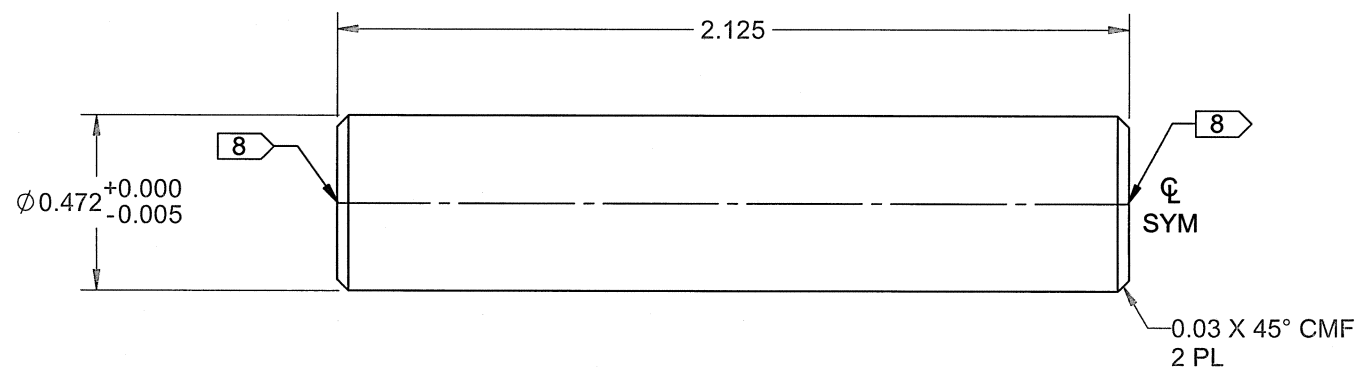
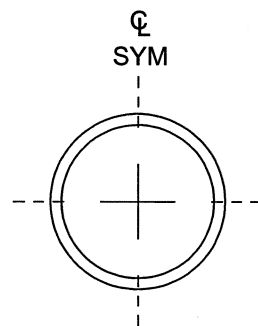
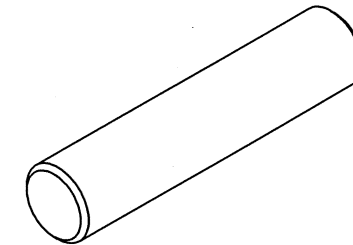
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**RBW0905G00134-3G-01-7 SLIDE PIN**

NOTES:

- 1) MATERIAL: 4140 (28-32 RC)
- 2) HEAT TREAT: N/A
- 3) FINISH: ZINC PLATE (YELLOW OR BLACK) PER ASTM B633 TYPE 2 CLASS 2
- 4) TOLERANCES: X.X =  $\pm 0.1$ " /  $\pm 1^\circ$   
X.XX =  $\pm 0.01$ " /  $\pm 0.5^\circ$   
X.XXX =  $\pm 0.005$ " /  $\pm 0.1^\circ$   
X.XXXX =  $\pm 0.0005$ " /  $\pm 0.05^\circ$   
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES =  $\pm 0.005$ "
- 5) UNITS: INCHES UNLESS OTHERWISE NOTED
- 6) REMOVE ALL SHARP EDGES AND BURRS
- 7) IDENTIFICATION: N/A
- 8) CENTER DRILL IS ACCEPTABLE

**SEE ATTACHED DEVIATION**

DESIGN	VM	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	VM		
CHECKED	VM	TOOL PART #	REV H
MFG. APPR.	DP	RBW0905G00134-3G-01	SHEET 9 OF 27
APPROVED		TITLE	SCALE
DATE 3/18/2019		TOW DOLLY TONGUE ASSY	NTS
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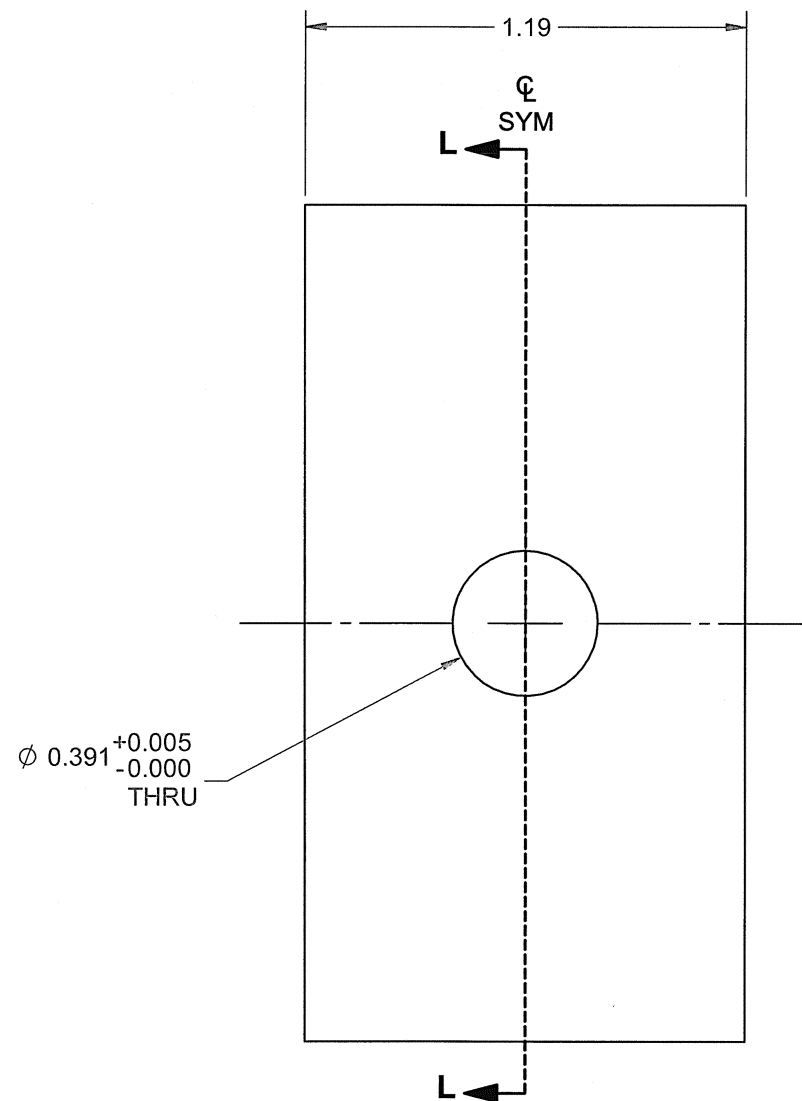
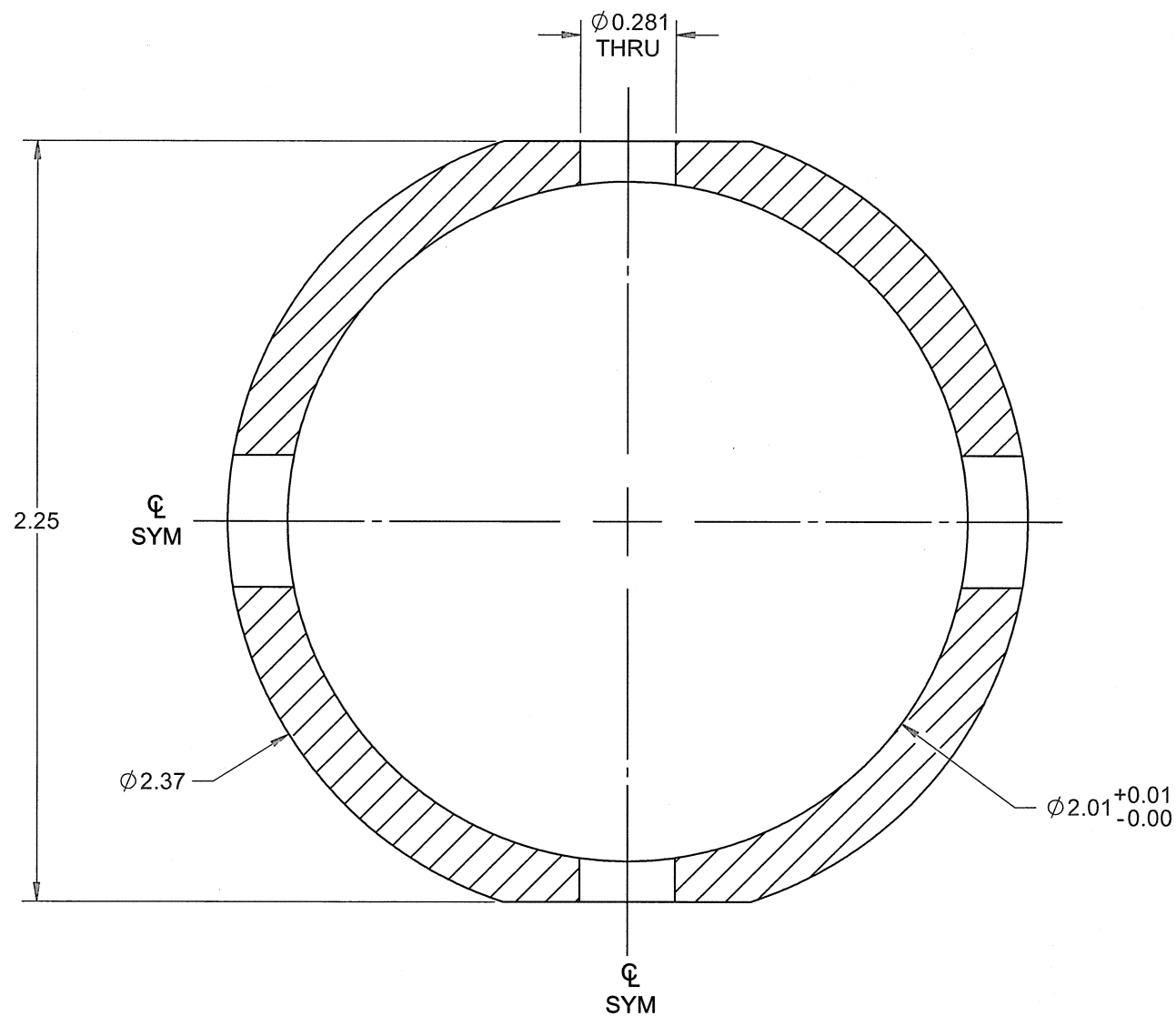
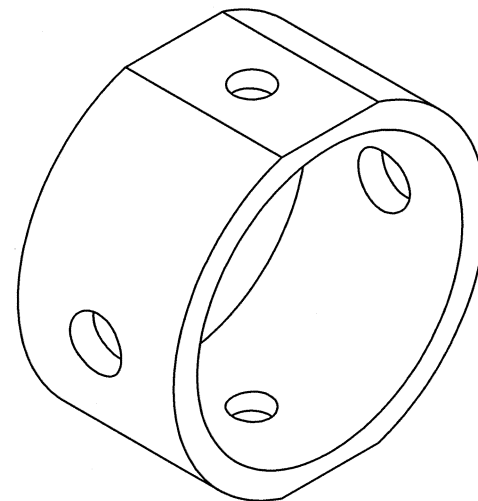
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**RBW0905G00134-3G-01-8 FRONT COLLAR****SECTION L-L**

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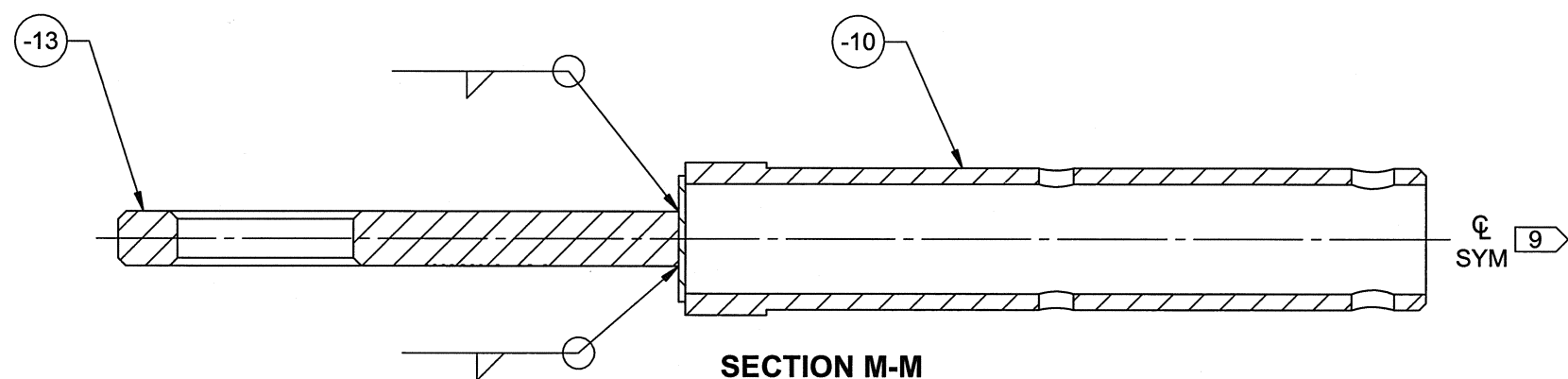
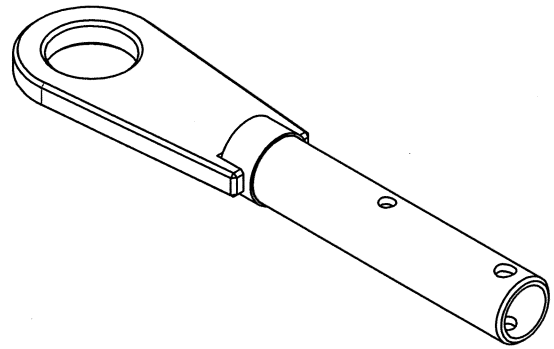
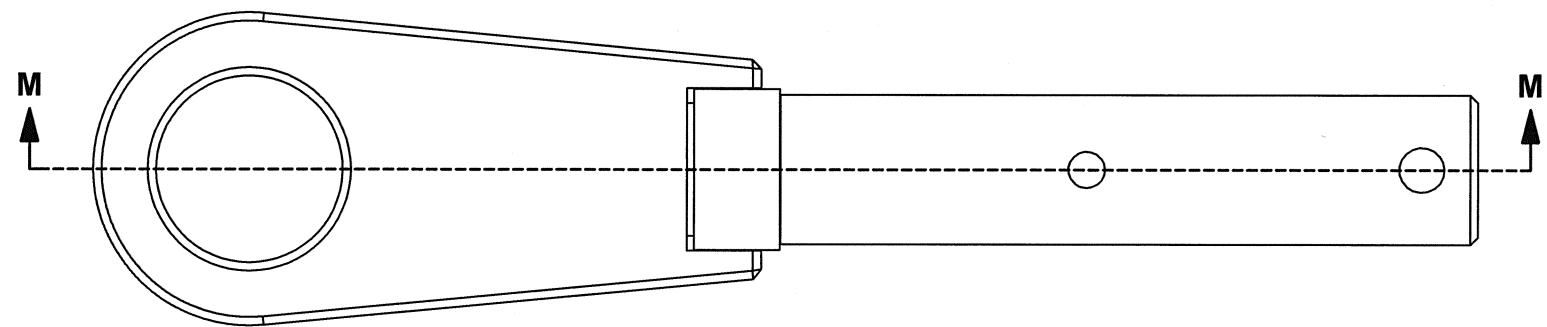
**NOTES:**

- 1) MATERIAL: 4140 (28-32 RC)
- 2) HEAT TREAT: N/A
- 3) FINISH: ZINC PLATE (YELLOW OR BLACK) PER ASTM B633 TYPE 2 CLASS 2
- 4) TOLERANCES: X.X = +/- 0.1" / +/- 1°  
X.XX = +/- 0.01" / +/- 0.5°  
X.XXX = +/- 0.005" / +/- 0.1°  
X.XXXX = +/- 0.0005" / +/- 0.05°  
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/- 0.005"
- 5) UNITS: INCHES UNLESS OTHERWISE NOTED
- 6) REMOVE ALL SHARP EDGES AND BURRS
- 7) IDENTIFICATION: N/A

**SEE ATTACHED DEVIATION**

DESIGN	VM	<b>DART AEROSPACE LTD</b>	
DRAWN	VM	HAWKESBURY, ONTARIO, CANADA	
CHECKED	VM	TOOL PART #	REV H
MFG. APPR.	DP	RBW0905G00134-3G-01	SHEET 10 OF 27
APPROVED	VP	TITLE	SCALE
DATE	3/18/2019	TOW DOLLY TONGUE ASSY	NTS
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ITEM #	QTY	PART #	PART TITLE
-10	1	RBW0905G00134-3G-01-10	TONGUE TUBE ASSY
-13	1	RBW0905G00134-3G-01-13	TONGUE



SECTION M-M

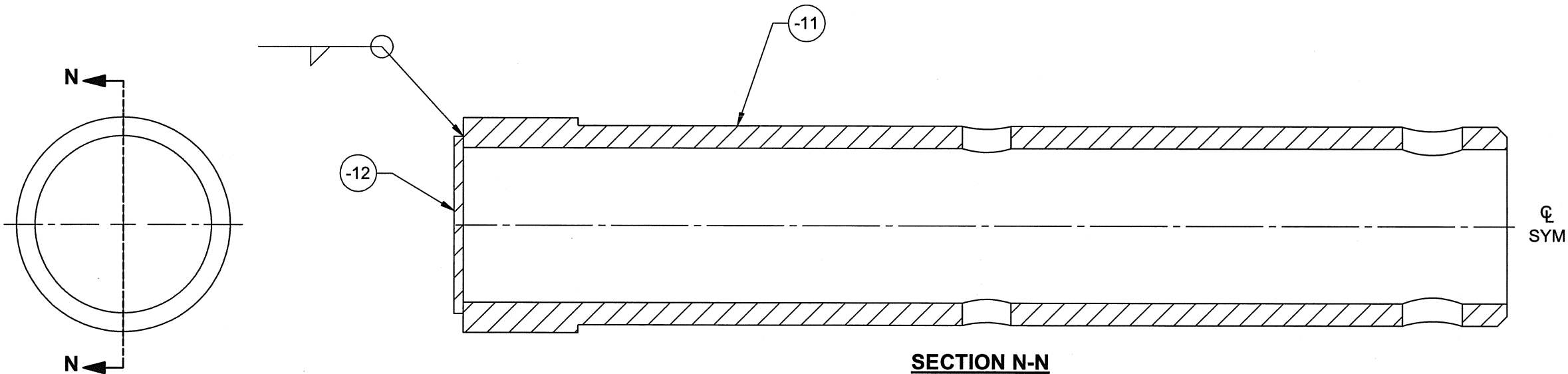
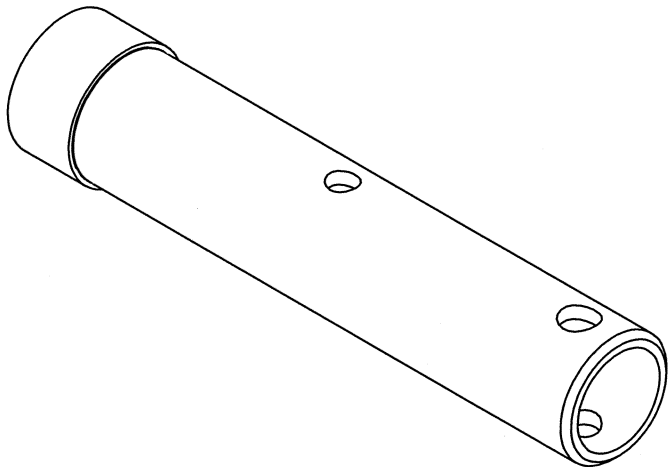
**RBW0905G00134-3G-01-9 TONGUE ASSY**

- NOTES:
- 1) MATERIAL: N/A
  - 2) HEAT TREAT: N/A
  - 3) FINISH: BLACK OXIDE PER MIL-C-13924 CLASS 1 THEN APPLY A THIN LAYER OF OIL / CPC PER MIL-PRF-16173 GRADE 3 CLASS 1 OR MIL-C-81309 TYPE III OR MIL-C-23411A OR MIL-PRF-81309 AND WIPE OFF EXCESS
  - 4) TOLERANCES: X.X = +/- 0.1" / +/- 1°  
X.XX = +/- 0.01" / +/- 0.5°  
X.XXX = +/- 0.005" / +/- 0.1°  
X.XXXX = +/- 0.0005" / +/- 0.05°  
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"
  - 5) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 6) IDENTIFICATION: N/A
  - 7) ASSEMBLE AS SHOWN
  - 8) REMOVE ALL WELD SPATTERS
  - 9) ITEM -10 AND ITEM -13 MUST BE CENTERED WITH EACH OTHER BEFORE WELDING

**SEE ATTACHED DEVIATION**

DESIGN	VM	<b>DART AEROSPACE LTD</b>	
DRAWN	VM	HAWKESBURY, ONTARIO, CANADA	
CHECKED	VM	TOOL PART #	REV H
MFG. APPR.	DP	RBW0905G00134-3G-01	SHEET 11 OF 27
APPROVED	VP	TITLE	SCALE
DATE 3/18/2019		TOW DOLLY TONGUE ASSY	NTS
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ITEM #	QTY	PART #	PART TITLE
-11	1	RBW0905G00134-3G-01-11	TONGUE TUBE
-12	1	RBW0905G00134-3G-01-12	TONGUE CAP



RBW0905G00134-3G-01-10 TONGUE TUBE ASSY

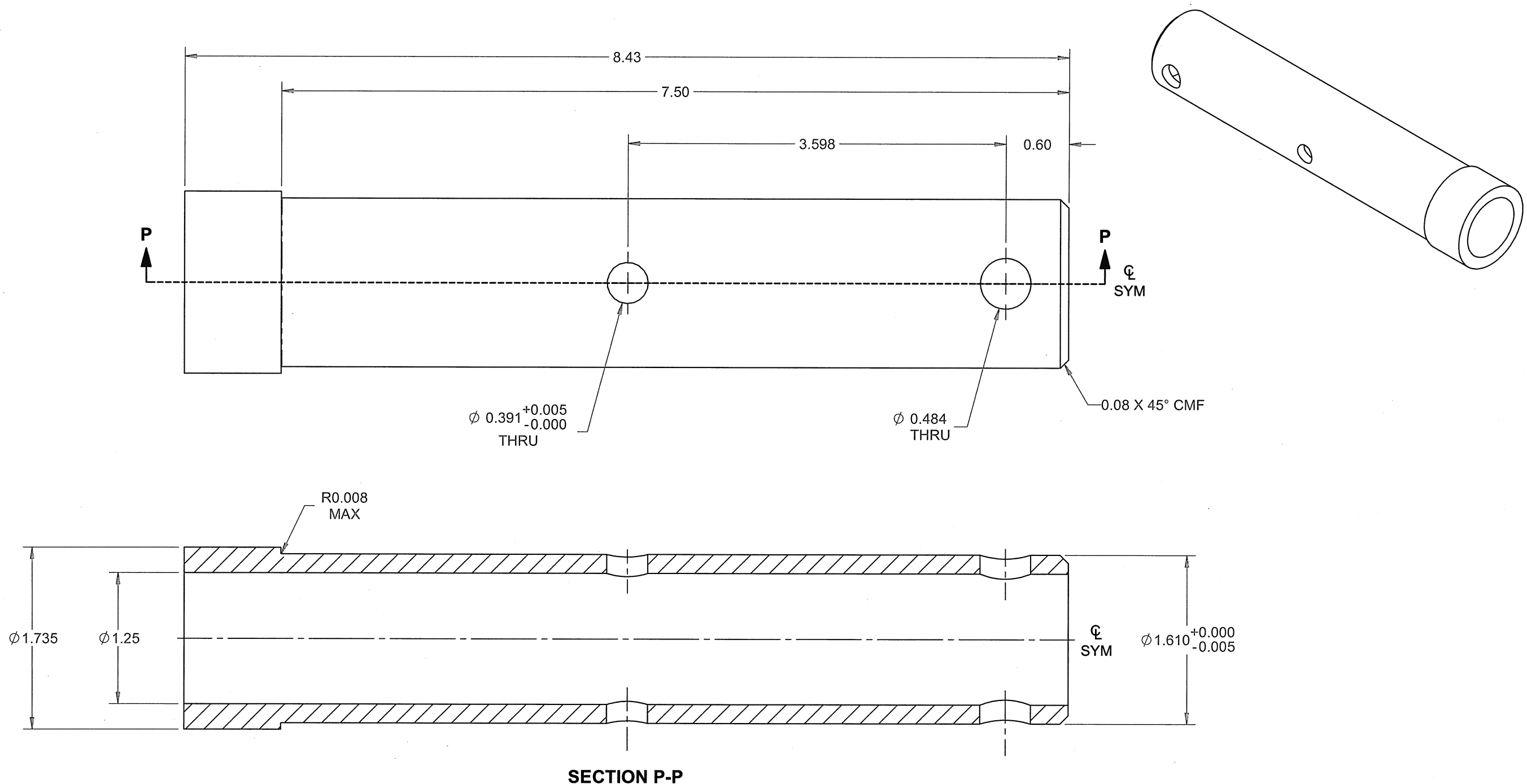
NOTES:  
1) MATERIAL: N/A  
2) HEAT TREAT: N/A  
3) FINISH: N/A  
4) TOLERANCES: X.X = +/- 0.1" / +/- 1°  
X.XX = +/- 0.01" / +/- 0.5°  
X.XXX = +/- 0.005" / +/- 0.1°  
X.XXXX = +/- 0.0005" / +/- 0.05°  
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"  
5) UNITS: INCHES UNLESS OTHERWISE NOTED  
6) IDENTIFICATION: N/A  
7) ASSEMBLE AS SHOWN  
8) REMOVE ALL WELD SPATTERS

SEE ATTACHED DEVIATION

DESIGN	VM	DART AEROSPACE LTD	
DRAWN	VM	HAWKESBURY, ONTARIO, CANADA	
CHECKED	VM	TOOL PART #	REV H
MFG. APPR.	DP	RBW0905G00134-3G-01	SHEET 12 OF 27
APPROVED	VM	TITLE	SCALE
DATE 3/18/2019		TOW DOLLY TONGUE ASSY	NTS
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SECTION P-P

RBW0905G00134-3G-01-11 TONGUE TUBE

SEE ATTACHED DEVIATION

- NOTES:
- 1) MATERIAL: 4140 (28-32 RC)
  - 2) HEAT TREAT: N/A
  - 3) FINISH: N/A
  - 4) TOLERANCES: X.X = +/- 0.1" / +/- 1°  
X.XX = +/- 0.01" / +/- 0.5°  
X.XXX = +/- 0.005" / +/- 0.1°  
X.XXXX = +/- 0.0005" / +/- 0.05°  
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"
  - 5) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 6) REMOVE ALL SHARP EDGES AND BURRS
  - 7) IDENTIFICATION: N/A

DESIGN	VM	DART AEROSPACE LTD	
DRAWN	VM	HAWKESBURY, ONTARIO, CANADA	
CHECKED	VM	TOOL PART #	REV H
MFG. APPR.	DP	RBW0905G00134-3G-01	SHEET 13 OF 27
APPROVED	W	TITLE	SCALE
DATE 3/18/2019		TOW DOLLY TONGUE ASSY	NTS
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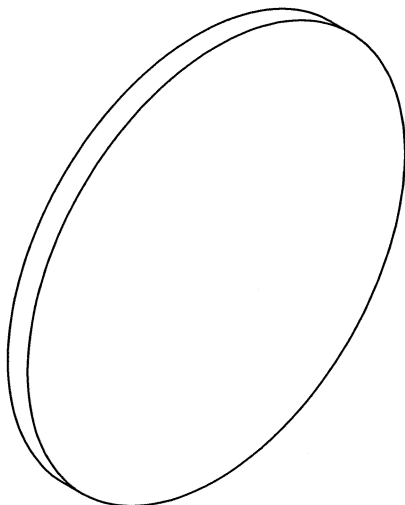
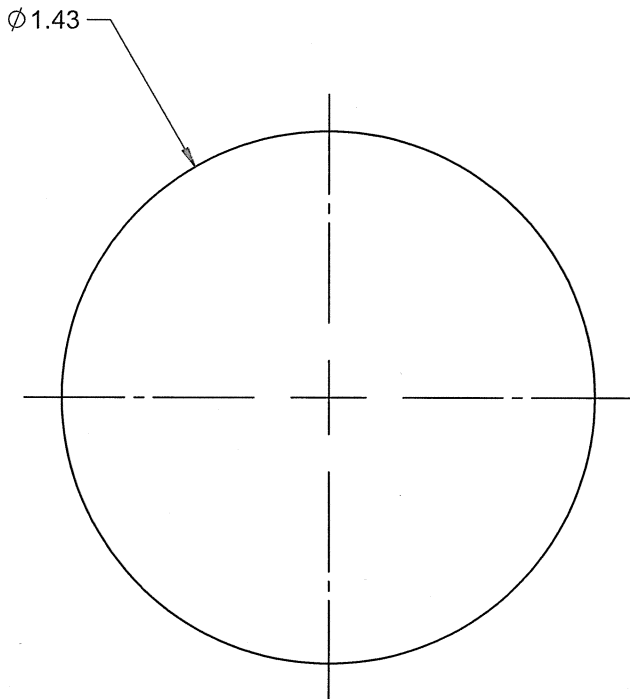
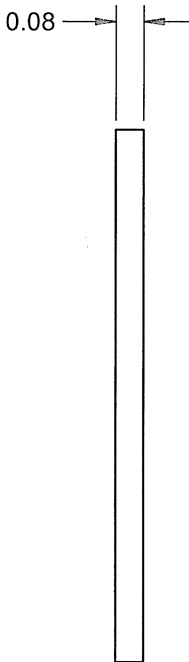
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**RBW0905G00134-3G-01-12 TONGUE CAP**

**SEE ATTACHED DEVIATION**

NOTES:  
1) MATERIAL: A36/1018/1020/1025 HR  
2) HEAT TREAT: N/A  
3) FINISH: N/A  
4) TOLERANCES: X.X = +/- 0.1" / +/- 1°  
                  X.XX = +/- 0.01" / +/- 0.5°  
                  X.XXX = +/- 0.005" / +/- 0.1°  
                  X.XXXX = +/- 0.0005" / +/- 0.05°  
                  PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"  
5) UNITS: INCHES UNLESS OTHERWISE NOTED  
6) REMOVE ALL SHARP EDGES AND BURRS  
7) IDENTIFICATION: N/A

DESIGN	VM	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	VM		
CHECKED	VM	TOOL PART #	REV H
MFG. APPR.	DP	RBW0905G00134-3G-01	SHEET 14 OF 27
APPROVED	VP	TITLE	SCALE
DATE 3/18/2019		TOW DOLLY TONGUE ASSY	NTS
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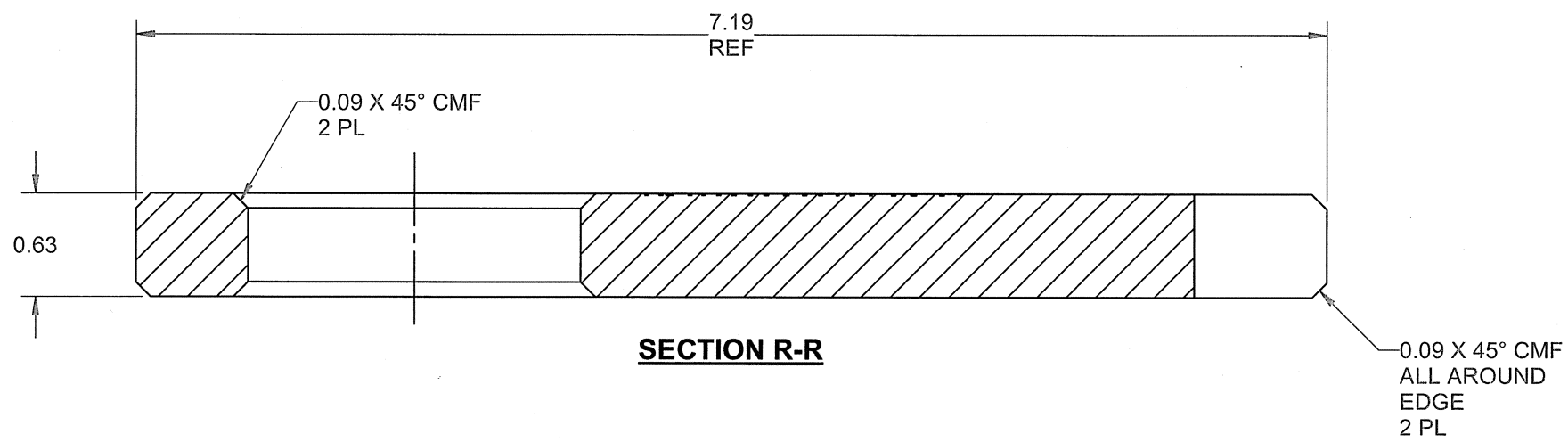
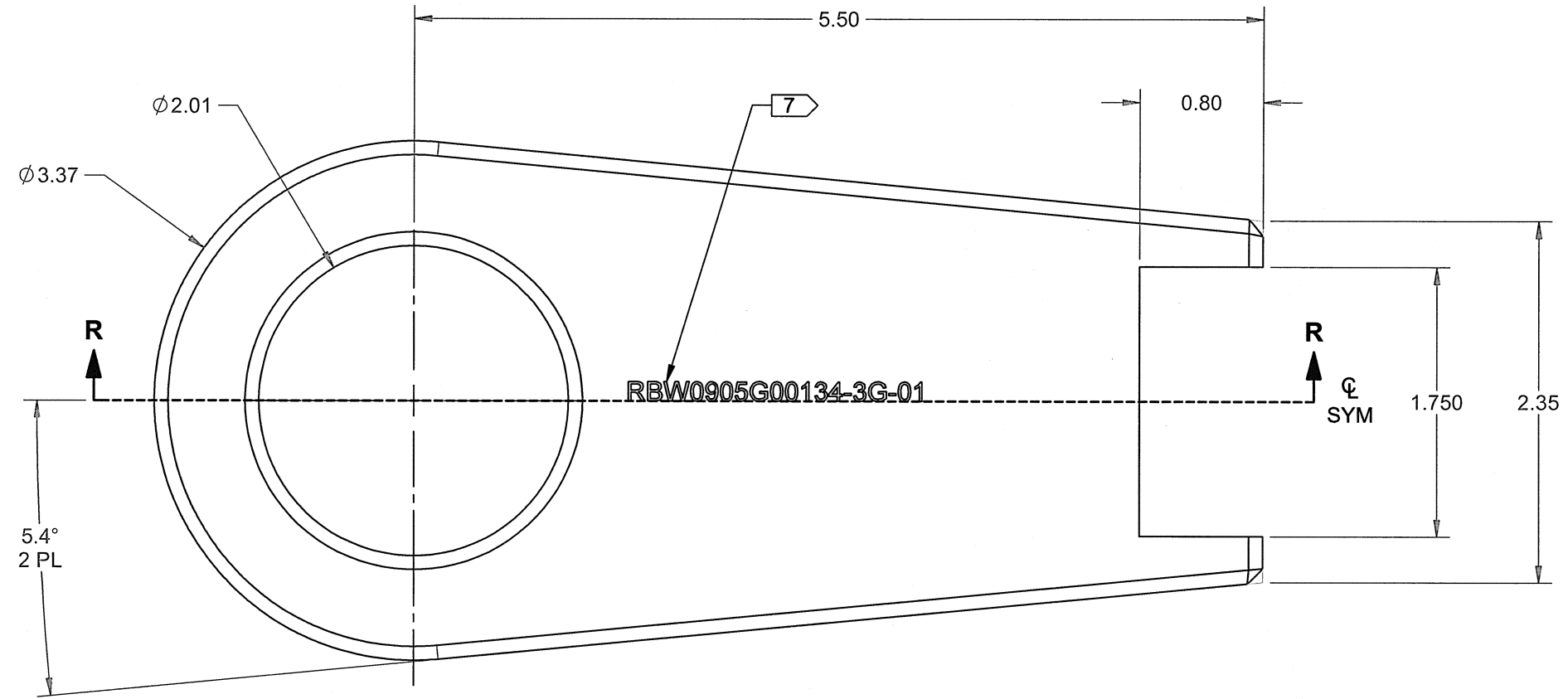
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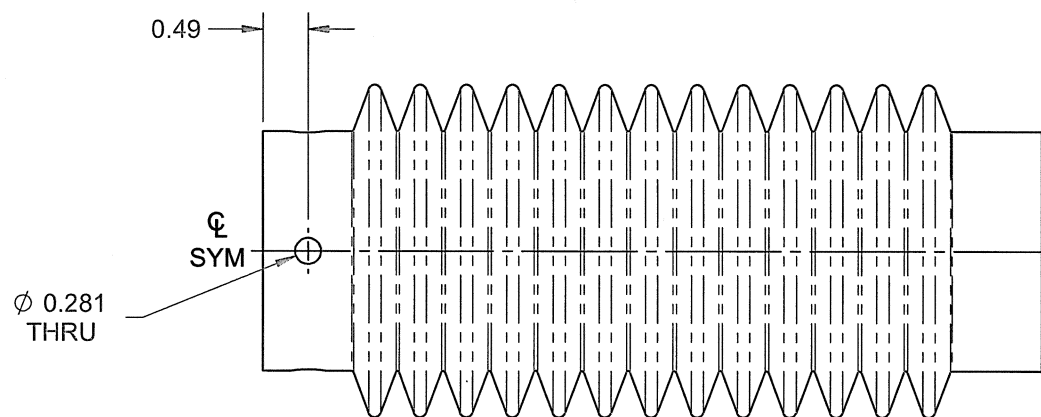
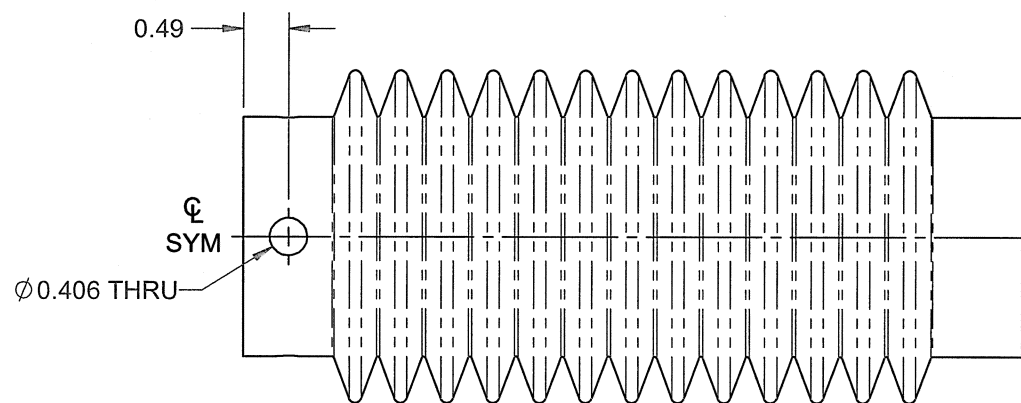
SECTION R-R

RBW0905G00134-3G-01-13 TONGUE

SEE ATTACHED DEVIATION

- NOTES:
- 1) MATERIAL: 4140 (28-32 RC)
  - 2) HEAT TREAT: N/A
  - 3) FINISH: N/A
  - 4) TOLERANCES: X.X = +/- 0.1" / +/- 1°  
X.XX = +/- 0.01" / +/- 0.5°  
X.XXX = +/- 0.005" / +/- 0.1°  
X.XXXX = +/- 0.0005" / +/- 0.05°  
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/- 0.005"
  - 5) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 6) REMOVE ALL SHARP EDGES AND BURRS
  - 7) IDENTIFICATION: MACHINE ENGRAVE OR DOT MARK T/N AS SHOWN

DESIGN	VM	DART AEROSPACE LTD	
DRAWN	VM	HAWKESBURY, ONTARIO, CANADA	
CHECKED	VM	TOOL PART #	REV H
MFG. APPR.	DP	RBW0905G00134-3G-01	SHEET 15 OF 27
APPROVED	VM	TITLE	SCALE
DATE	3/18/2019	TOW DOLLY TONGUE ASSY	NTS
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**RBW0905G00134-3G-01-14 C.V. BOOT**

NOTES:

1) MATERIAL: McMaster#9421K65 OR EQUIV. (ROUND BELLOWS WITH CUFF ENDS 1 FT EXTENDED LENGTH X 2-1/2" ID)

2) HEAT TREAT: N/A

3) FINISH: N/A

4) TOLERANCES: X.X = +/- 0.1" / +/- 1°

X.XX = +/- 0.01" / +/- 0.5°

X.XXX = +/- 0.005" / +/- 0.1°

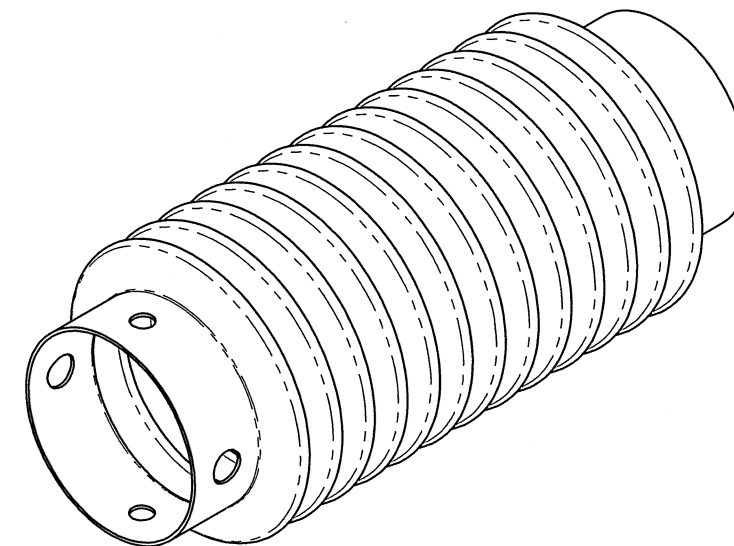
X.XXXX = +/- 0.0005" / +/- 0.05°

PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"

5) UNITS: INCHES UNLESS OTHERWISE NOTED

6) REMOVE ALL SHARP EDGES AND BURRS

7) IDENTIFICATION: N/A

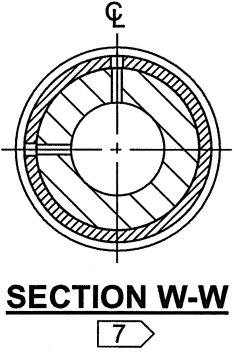
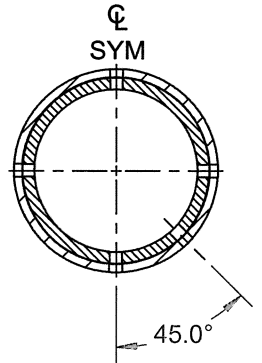
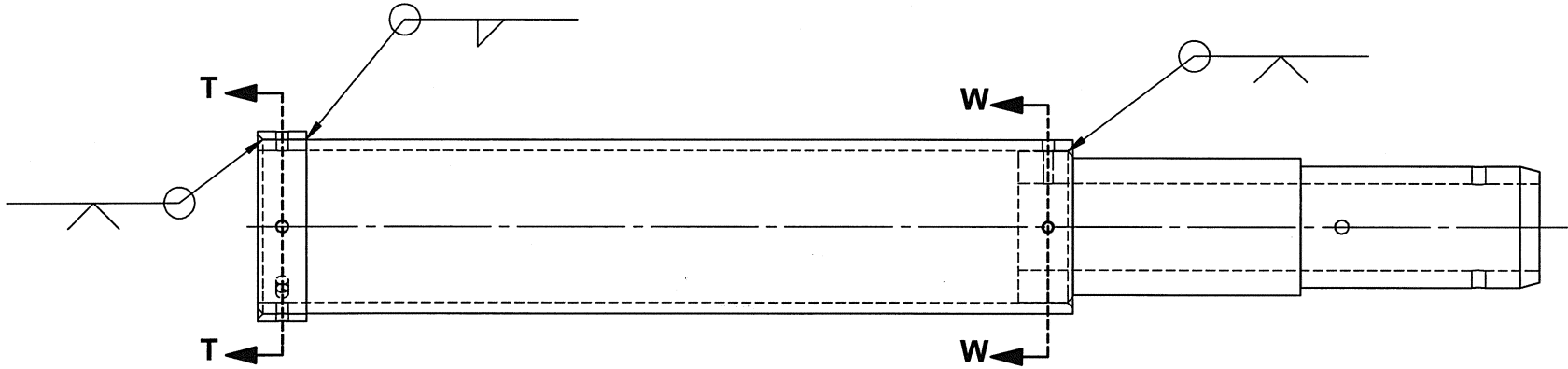
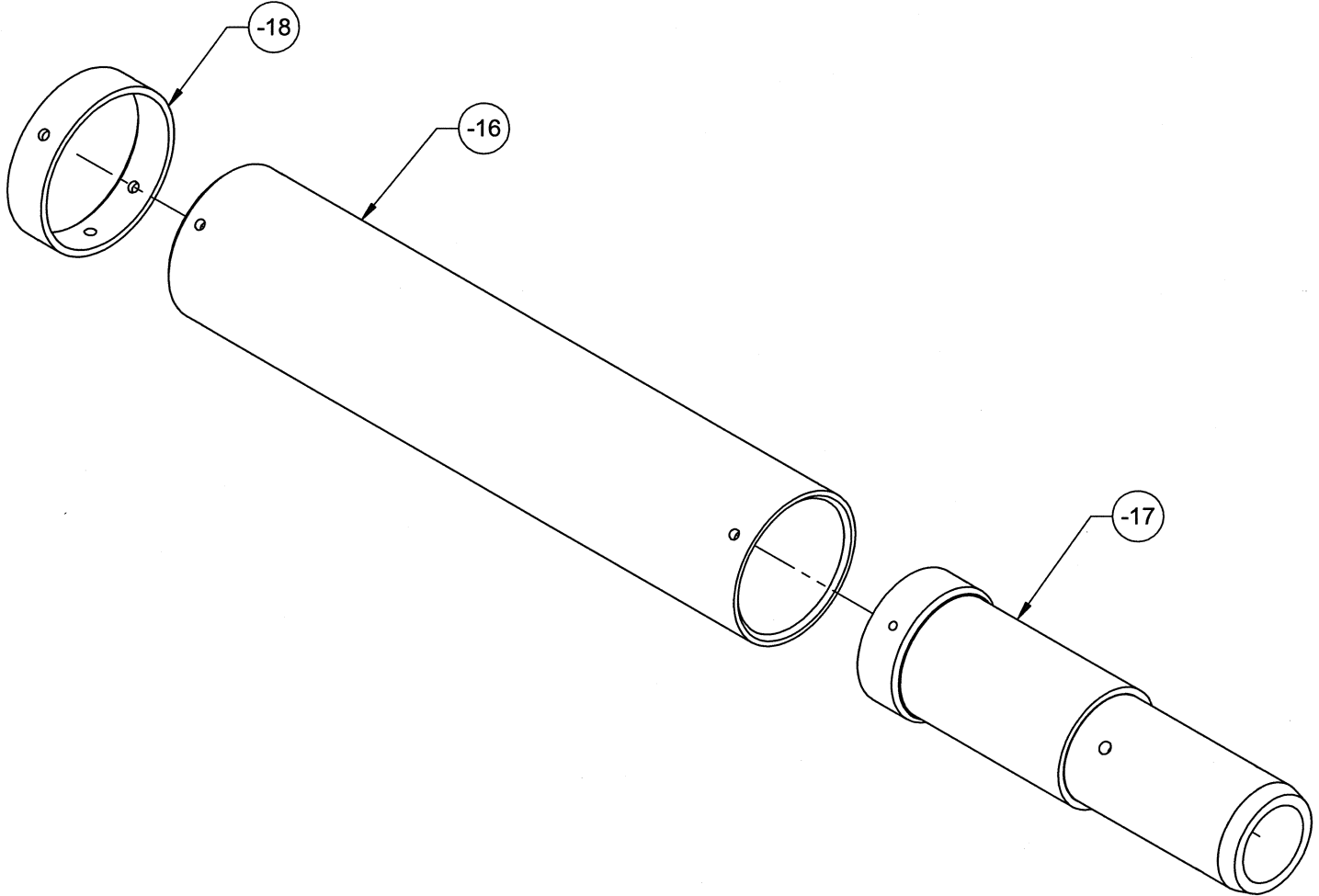
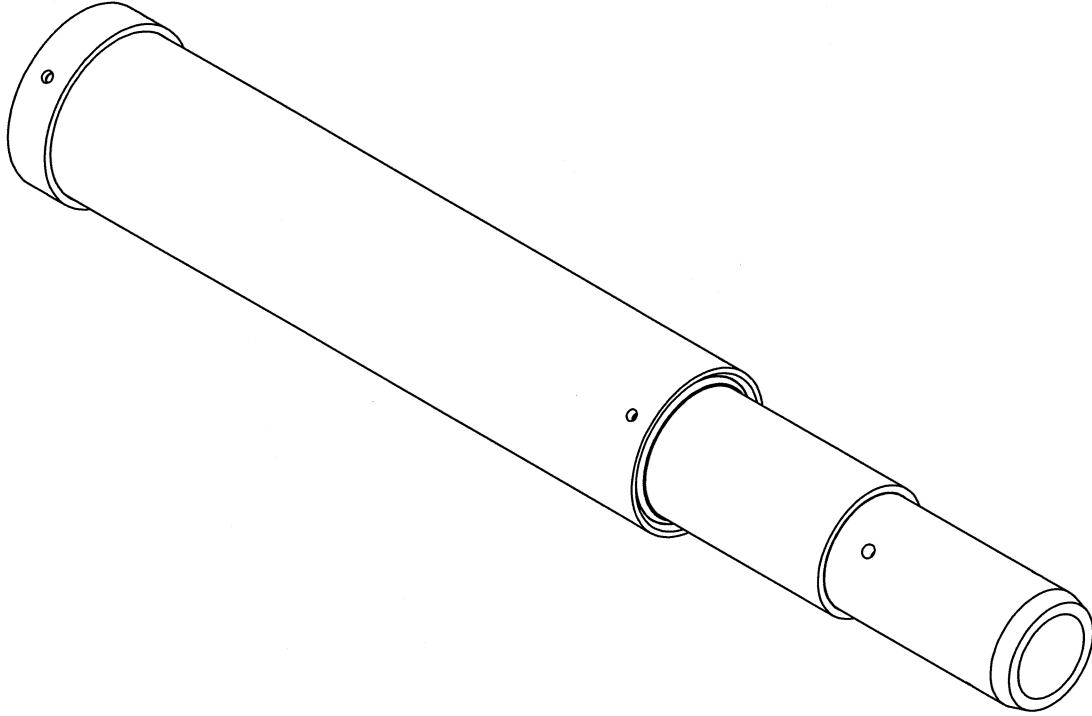


**SEE ATTACHED DEVIATION**

DESIGN	VM	<b>DART AEROSPACE LTD</b>	
DRAWN	VM	HAWKESBURY, ONTARIO, CANADA	
CHECKED	VM	TOOL PART #	REV H
MFG. APPR.	DP	RBW0905G00134-3G-01	SHEET 16 OF 27
APPROVED	VP	TITLE	SCALE
DATE	3/18/2019	TOW DOLLY TONGUE ASSY	NTS
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ITEM #	QTY	PART #	PART TITLE
-16	1	RBW0905G00134-3G-01-16	SPRING COVER
-17	1	RBW0905G00134-3G-01-17	TAIL
-18	1	RBW0905G00134-3G-01-18	SPRING END COVER



RBW0905G00134-3G-01-15 SPRING COVER ASSY

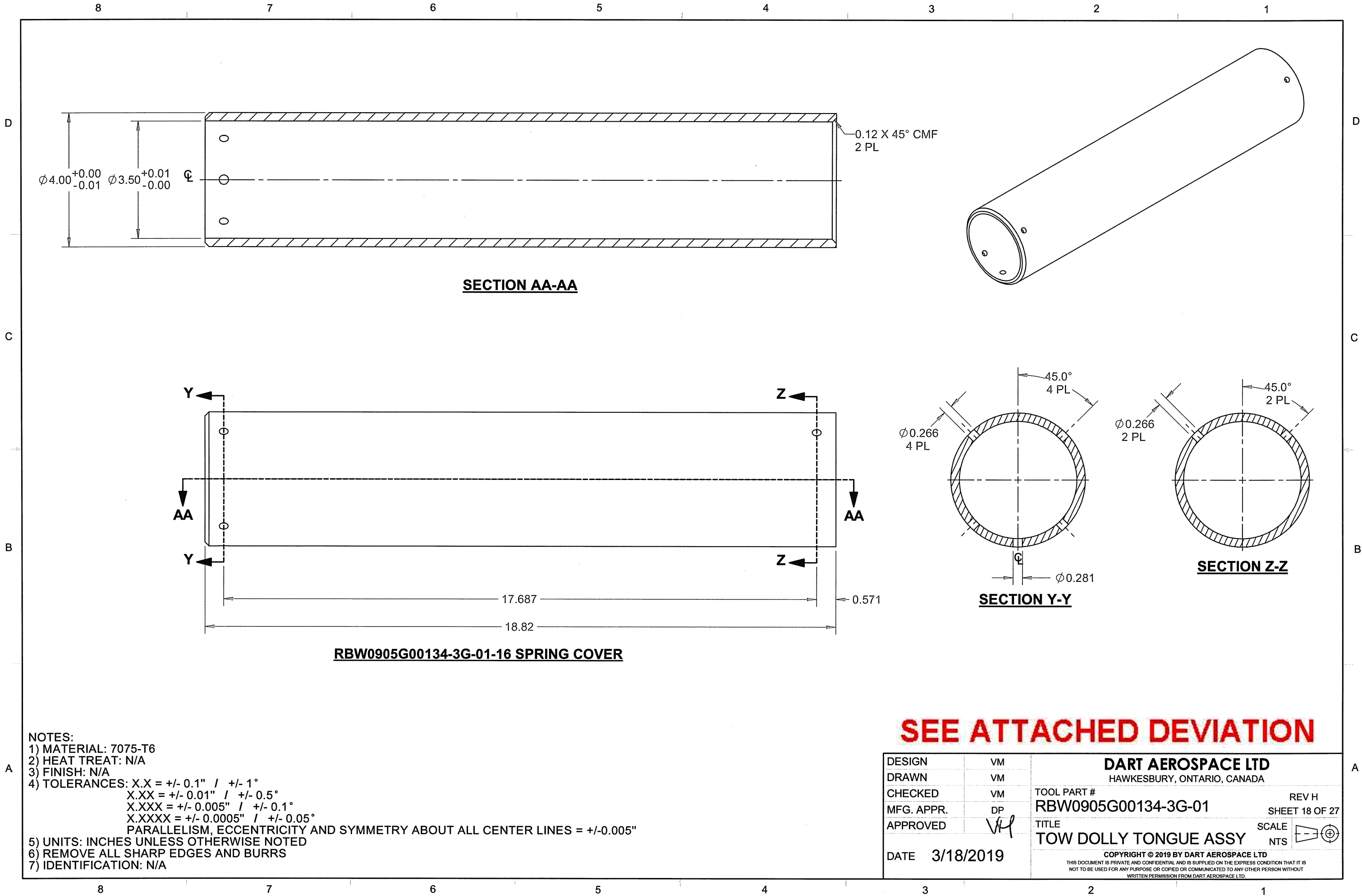
SECTION T-T

SECTION W-W

SEE ATTACHED DEVIATION

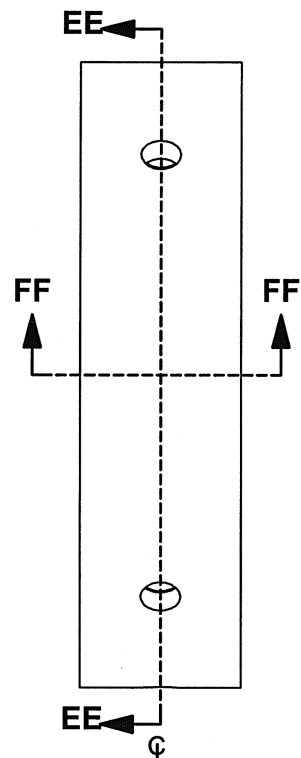
- NOTES:
- 1) MATERIAL: N/A
  - 2) HEAT TREAT: N/A
  - 3) FINISH: POWDERCOAT YELLOW QSI 005 OR MIL-PRF-24712
  - 4) TOLERANCES: X.X = +/- 0.1" / +/- 1°  
X.XX = +/- 0.01" / +/- 0.5°  
X.XXX = +/- 0.005" / +/- 0.1°  
X.XXXX = +/- 0.0005" / +/- 0.05°  
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"
  - 5) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 6) IDENTIFICATION: N/A
  - 7) ASSEMBLE AS SHOWN HOLES MUST BE ALIGN BEFORE WELDING
  - 8) MASK HOLES PRIOR TO POWDER COAT
  - 9) REMOVE ALL WELD SPATTERS

DESIGN	VM	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	VM		
CHECKED	VM	TOOL PART #	REV H
MFG. APPR.	DP	RBW0905G00134-3G-01	SHEET 17 OF 27
APPROVED	VP	TITLE	SCALE
DATE 3/18/2019		TOW DOLLY TONGUE ASSY	NTS
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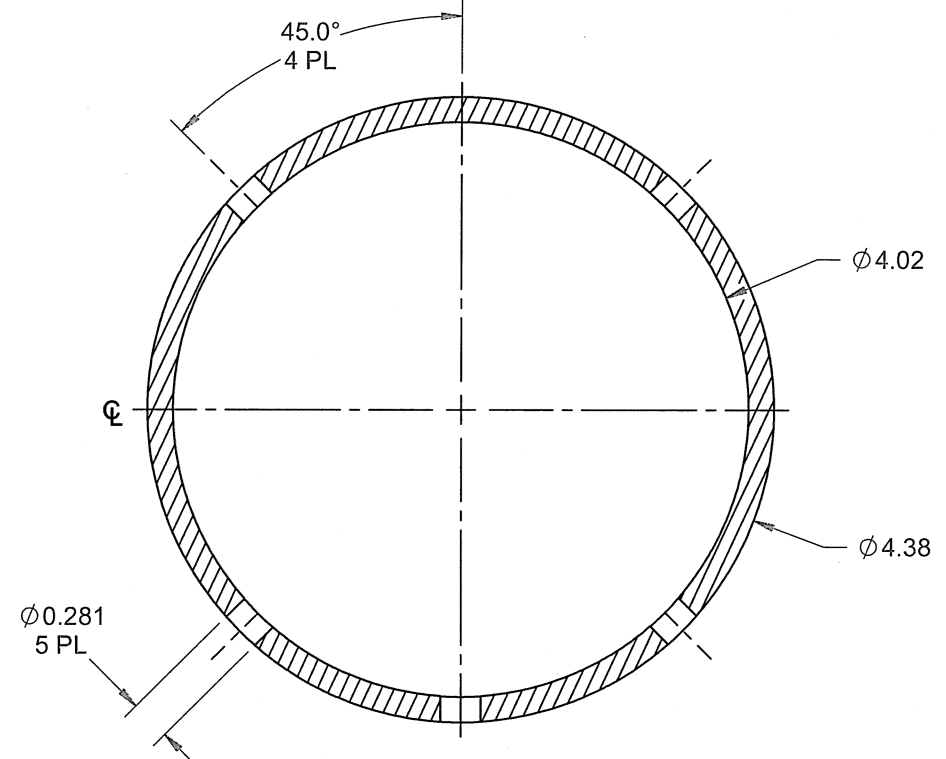
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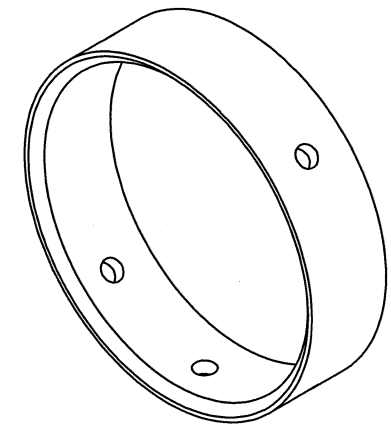
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0.12 X 45° CMF

SECTION FF-FF



SECTION EE-EE



RBW0905G00134-3G-01-18 SPRING END COVER

- NOTES:
- 1) MATERIAL: 7075-T6
  - 2) HEAT TREAT: N/A
  - 3) FINISH: N/A
  - 4) TOLERANCES: X.X = +/- 0.1" / +/- 1°  
X.XX = +/- 0.01" / +/- 0.5°  
X.XXX = +/- 0.005" / +/- 0.1°  
X.XXXX = +/- 0.0005" / +/- 0.05°  
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/- 0.005"
  - 5) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 6) REMOVE ALL SHARP EDGES AND BURRS
  - 7) IDENTIFICATION: N/A

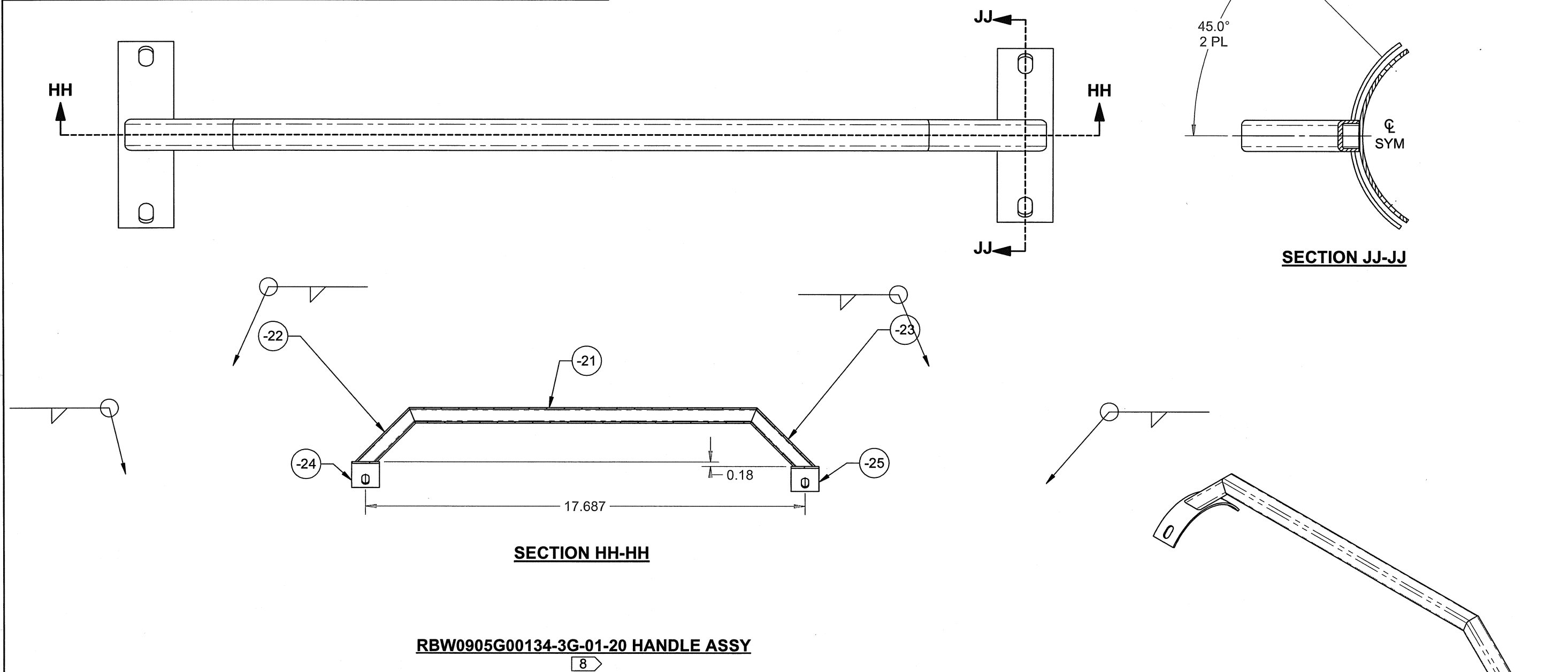
SEE ATTACHED DEVIATION

DESIGN	VM	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	VM		
CHECKED	VM	TOOL PART #	REV H
MFG. APPR.	DP	RBW0905G00134-3G-01	SHEET 20 OF 27
APPROVED	VP	TITLE	SCALE
DATE	3/18/2019	TOW DOLLY TONGUE ASSY	NTS
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ITEM #	QTY	PART #	PART TITLE
-21	1	RBW0905G00134-3G-01-21	TOP TUBE
-22	1	RBW0905G00134-3G-01-22	FRONT TUBE
-23	1	RBW0905G00134-3G-01-23	REAR TUBE
-24	1	RBW0905G00134-3G-01-24	FRONT MOUNT
-25	1	RBW0905G00134-3G-01-25	REAR MOUNT



NOTES:  
1) MATERIAL: N/A  
2) HEAT TREAT: N/A  
3) FINISH: POWDERCOAT YELLOW QSI 005 OR MIL-PRF-24712  
4) TOLERANCES: X.X = +/- 0.1" / +/- 1°  
X.XX = +/- 0.01" / +/- 0.5°  
X.XXX = +/- 0.005" / +/- 0.1°  
X.XXXX = +/- 0.0005" / +/- 0.05°  
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/- 0.005"  
5) UNITS: INCHES UNLESS OTHERWISE NOTED  
6) IDENTIFICATION: N/A  
7) ASSEMBLE AS SHOWN  
8) MASK HOLES PRIOR TO POWDER COAT  
9) REMOVE ALL WELD SPATTERS

SEE ATTACHED DEVIATION

DESIGN	VM	DART AEROSPACE LTD	
DRAWN	VM	HAWKESBURY, ONTARIO, CANADA	
CHECKED	VM	TOOL PART #	REV H
MFG. APPR.	DP	RBW0905G00134-3G-01	SHEET 22 OF 27
APPROVED	VP	TITLE	SCALE
DATE	3/18/2019	TOW DOLLY TONGUE ASSY	NTS
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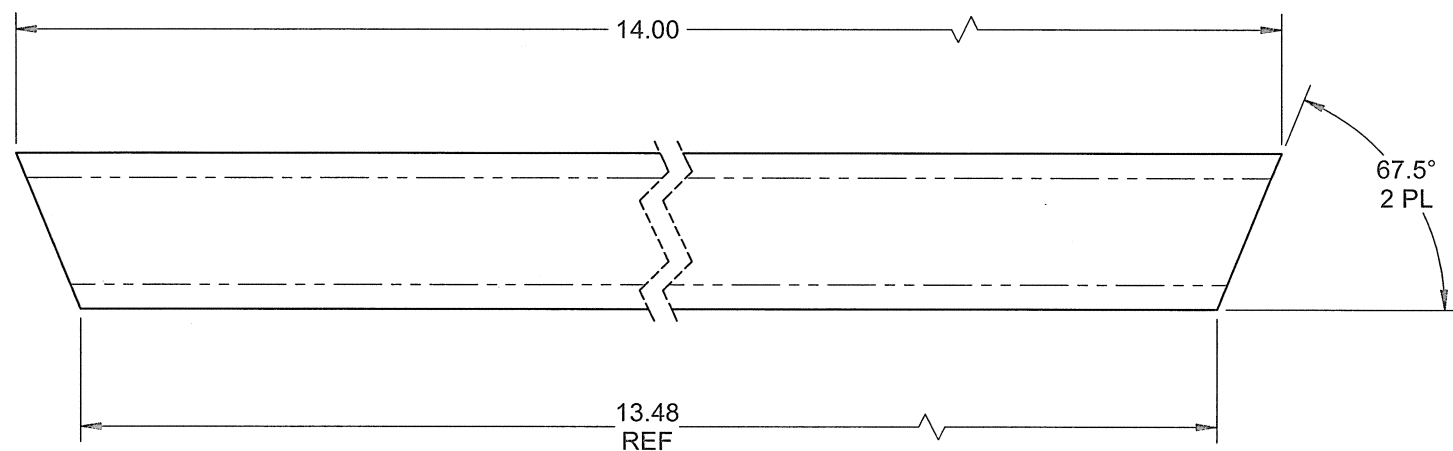
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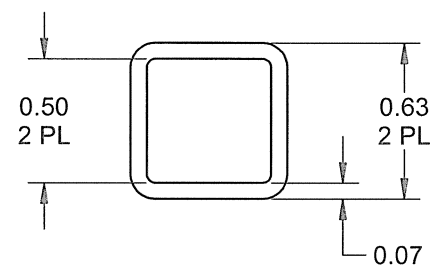
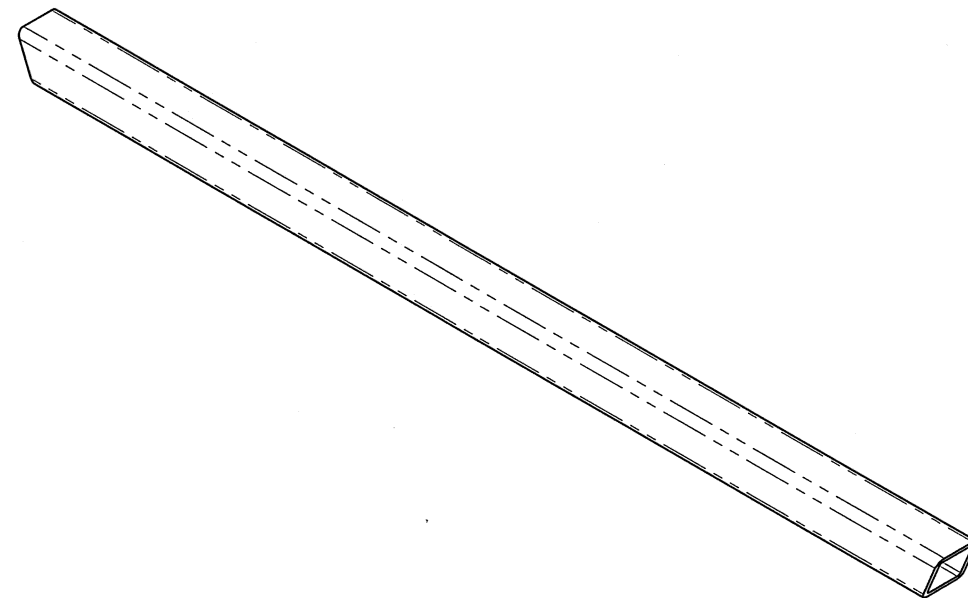
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**RBW0905G00134-3G-01-21 TOP TUBE**



NOTES:

1) MATERIAL: A513 TYPE 5 DOM TUBING

2) HEAT TREAT: N/A

3) FINISH: N/A

4) TOLERANCES: X.X = +/- 0.1" / +/- 1°

X.XX = +/- 0.01" / +/- 0.5°

X.XXX = +/- 0.005" / +/- 0.1°

X.XXXX = +/- 0.0005" / +/- 0.05°

PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"

5) UNITS: INCHES UNLESS OTHERWISE NOTED

6) REMOVE ALL SHARP EDGES AND BURRS

7) IDENTIFICATION: N/A

**SEE ATTACHED DEVIATION**

DESIGN	VM	<b>DART AEROSPACE LTD</b>	
DRAWN	VM	HAWKESBURY, ONTARIO, CANADA	
CHECKED	VM	TOOL PART #	REV H
MFG. APPR.	DP	RBW0905G00134-3G-01	SHEET 23 OF 27
APPROVED	VH	TITLE	SCALE
DATE	3/18/2019	TOW DOLLY TONGUE ASSY	NTS
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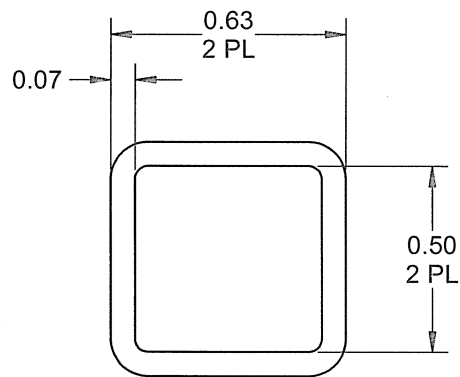
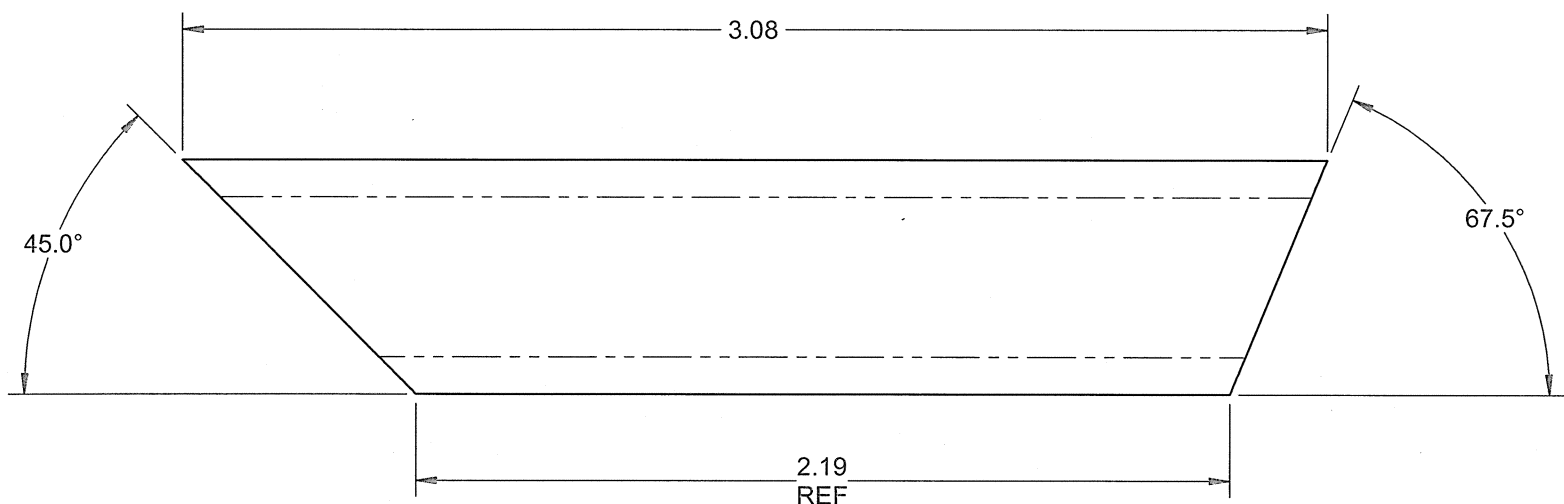
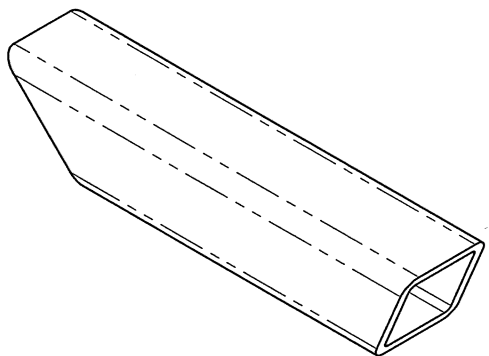
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**RBW0905G00134-3G-01-22 FRONT TUBE**

NOTES:  
1) MATERIAL: A513 TYPE 5 DOM TUBING  
2) HEAT TREAT: N/A  
3) FINISH: N/A  
4) TOLERANCES: X.X = +/- 0.1" / +/- 1°  
                  X.XX = +/- 0.01" / +/- 0.5°  
                  X.XXX = +/- 0.005" / +/- 0.1°  
                  X.XXXX = +/- 0.0005" / +/- 0.05°  
                  PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"  
5) UNITS: INCHES UNLESS OTHERWISE NOTED  
6) REMOVE ALL SHARP EDGES AND BURRS  
7) IDENTIFICATION: N/A

**SEE ATTACHED DEVIATION**

DESIGN	VM	<b>DART AEROSPACE LTD</b>	
DRAWN	VM	HAWKESBURY, ONTARIO, CANADA	
CHECKED	VM	TOOL PART #	REV H
MFG. APPR.	DP	RBW0905G00134-3G-01	SHEET 24 OF 27
APPROVED	VM	TITLE	SCALE
DATE	3/18/2019	TOW DOLLY TONGUE ASSY	NTS
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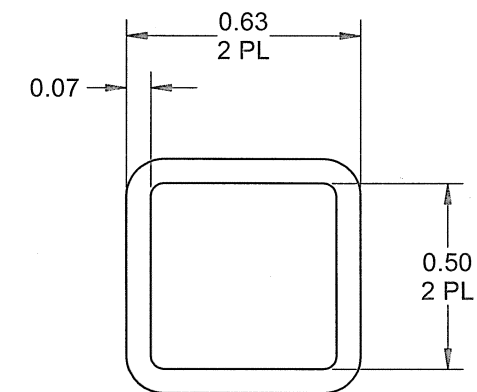
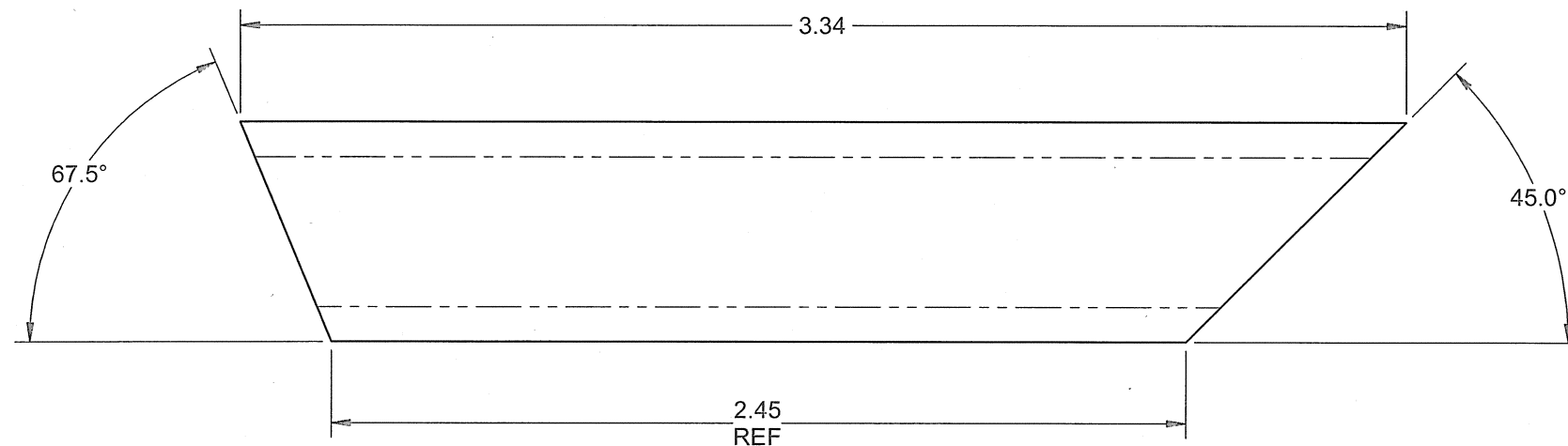
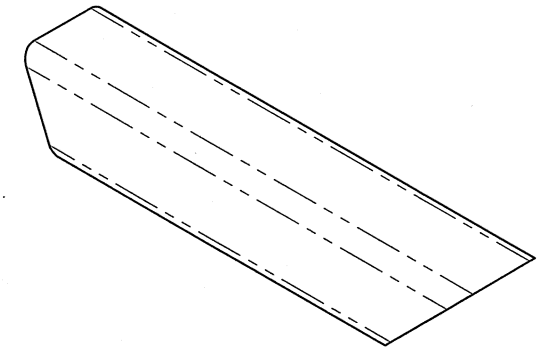
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**RBW0905G00134-3G-01-23 REAR TUBE****NOTES:**

1) MATERIAL: A513 TYPE 5 DOM TUBING

2) HEAT TREAT: N/A

3) FINISH: N/A

4) TOLERANCES: X.X = +/- 0.1" / +/- 1°

X.XX = +/- 0.01" / +/- 0.5°

X.XXX = +/- 0.005" / +/- 0.1°

X.XXXX = +/- 0.0005" / +/- 0.05°

PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"

5) UNITS: INCHES UNLESS OTHERWISE NOTED

6) REMOVE ALL SHARP EDGES AND BURRS

7) IDENTIFICATION: N/A

**SEE ATTACHED DEVIATION**

DESIGN	VM	<b>DART AEROSPACE LTD</b>	
DRAWN	VM	HAWKESBURY, ONTARIO, CANADA	
CHECKED	VM	TOOL PART #	REV H
MFG. APPR.	DP	RBW0905G00134-3G-01	SHEET 25 OF 27
APPROVED	VP	TITLE	SCALE
DATE	3/18/2019	TOW DOLLY TONGUE ASSY	NTS
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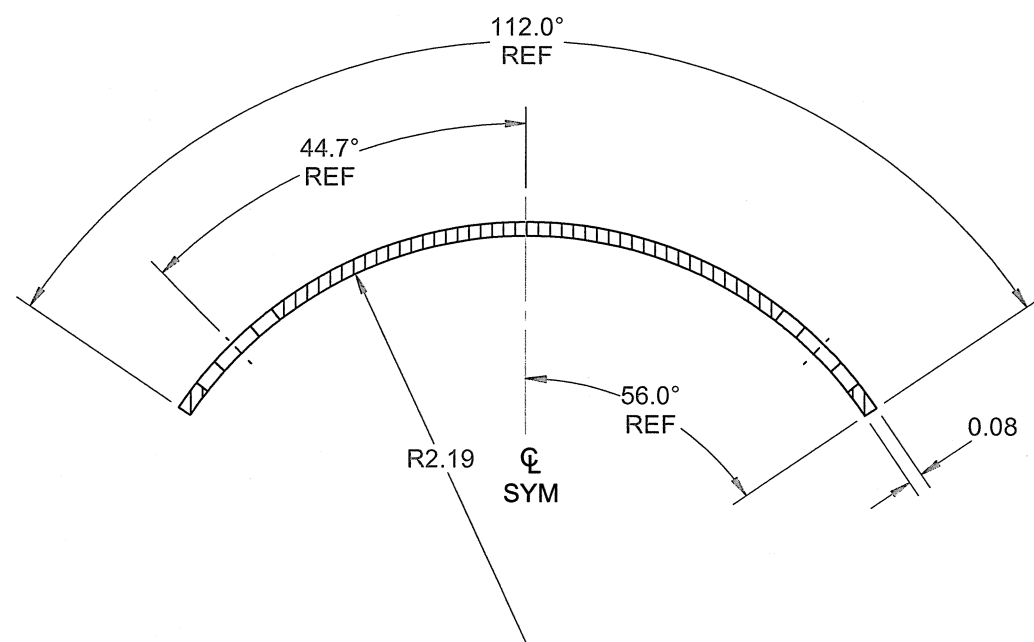
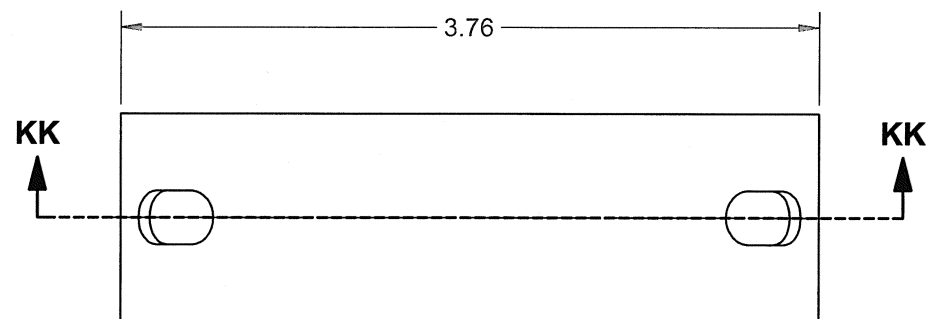
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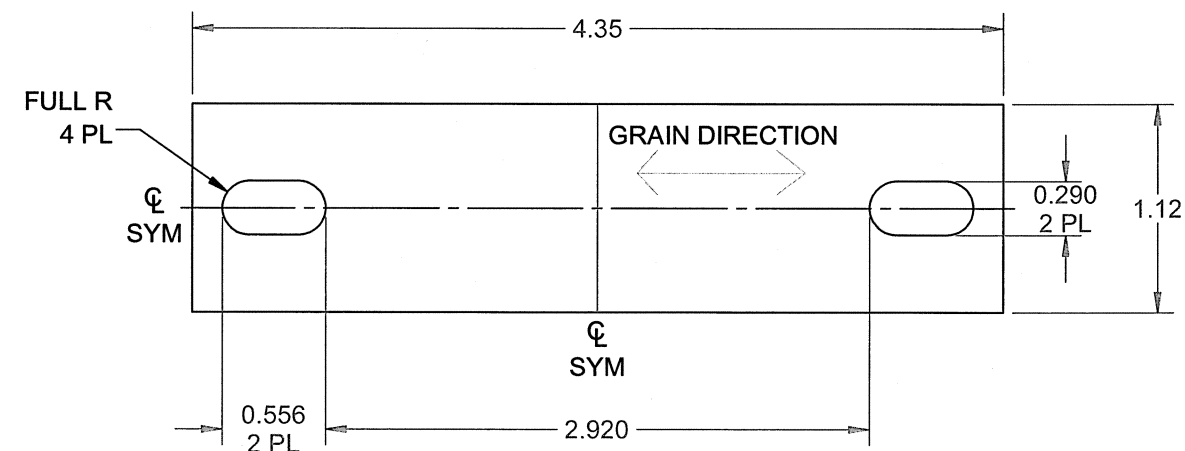
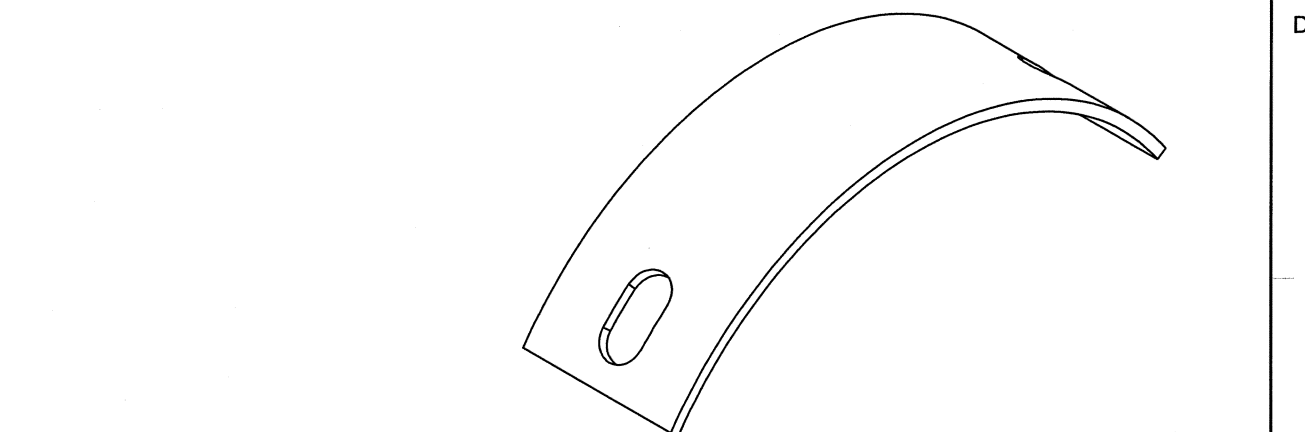
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**SECTION KK-KK**

**RBW0905G00134-3G-01-24 FRONT MOUNT**



**FLAT PATTERN**

**NOTES:**

1) MATERIAL: A36/1018/1020/1025 HR

2) HEAT TREAT: N/A

3) FINISH: N/A

4) TOLERANCES: X.X = +/- 0.1" / +/- 1°

X.XX = +/- 0.01" / +/- 0.5°

X.XXX = +/- 0.005" / +/- 0.1°

X.XXXX = +/- 0.0005" / +/- 0.05°



PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"

5) UNITS: INCHES UNLESS OTHERWISE NOTED

6) REMOVE ALL SHARP EDGES AND BURRS

7) IDENTIFICATION: N/A

**SEE ATTACHED DEVIATION**

DESIGN	VM	<b>DART AEROSPACE LTD</b>	
DRAWN	VM	HAWKESBURY, ONTARIO, CANADA	
CHECKED	VM	TOOL PART #	REV H
MFG. APPR.	DP	<b>RBW0905G00134-3G-01</b>	SHEET 26 OF 27
APPROVED		TITLE	SCALE
		<b>TOW DOLLY TONGUE ASSY</b>	NTS 
DATE	<b>3/18/2019</b>	<b>COPYRIGHT © 2019 BY DART AEROSPACE LTD</b>	
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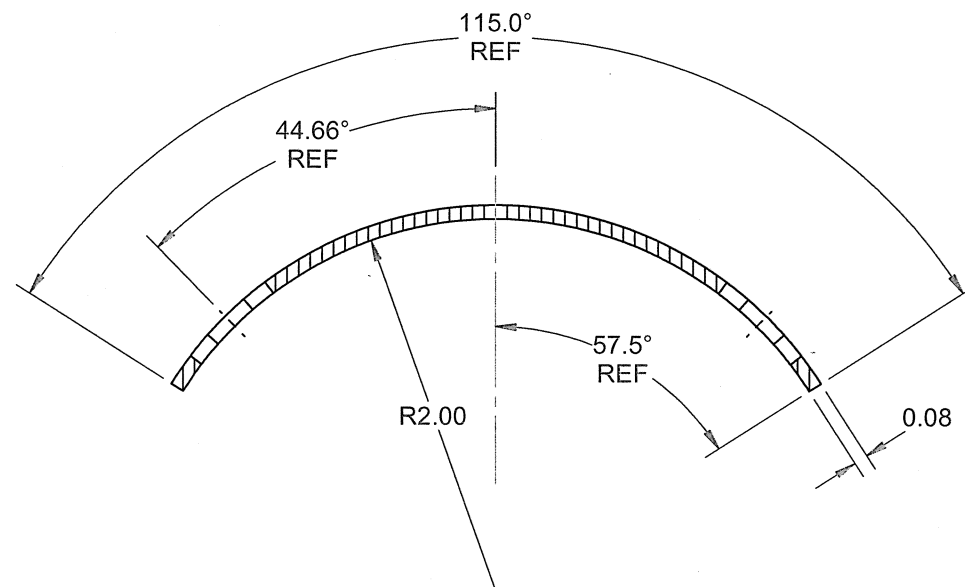
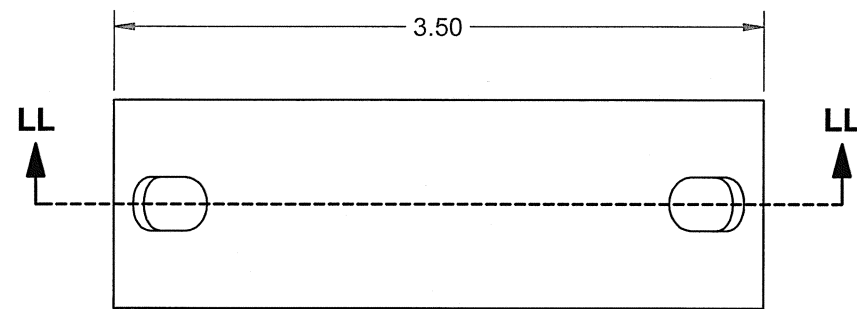
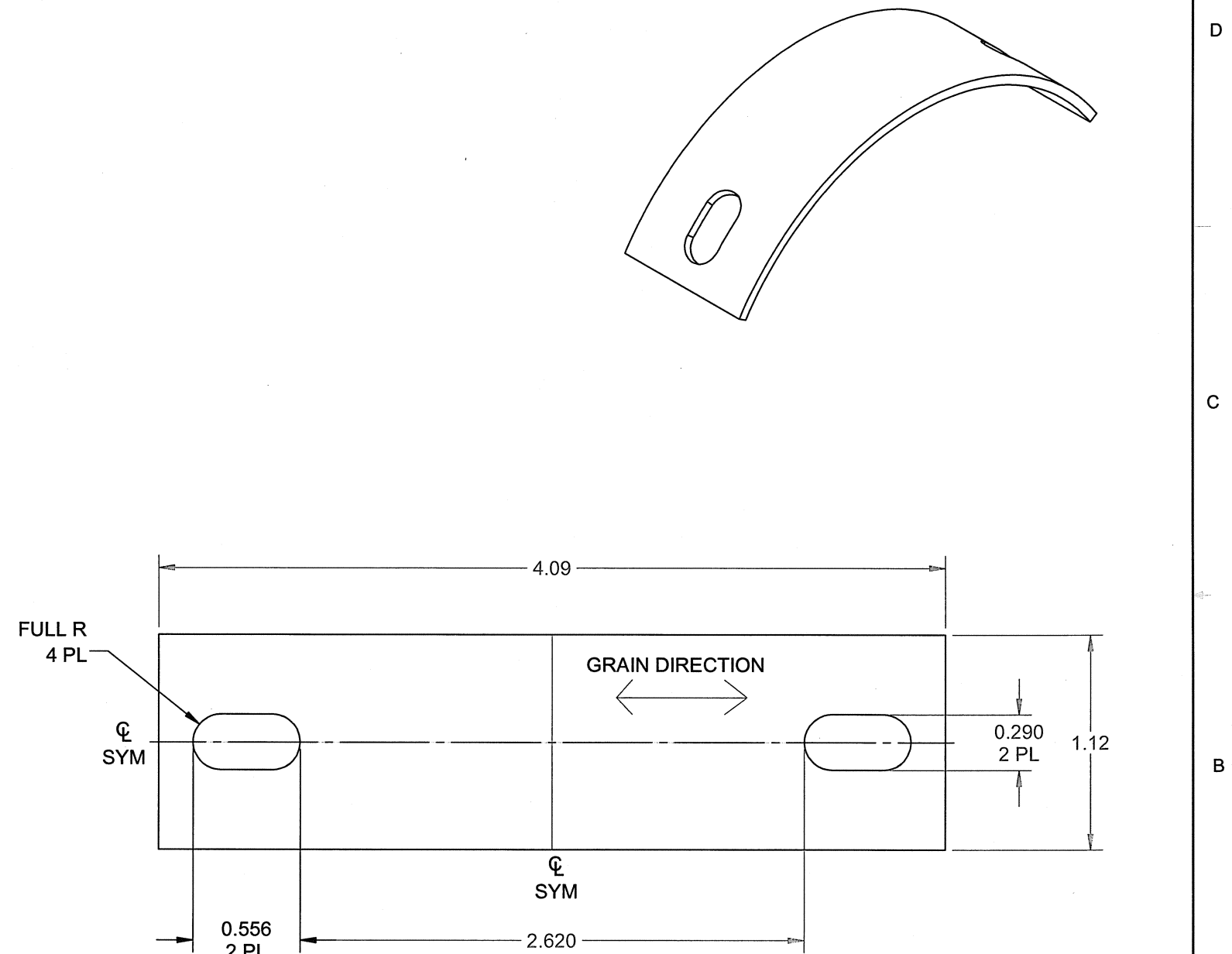
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**SECTION LL-LL****RBW0905G00134-3G-01-25 REAR MOUNT**

FLAT PATTERN

## NOTES:



- 1) MATERIAL: A36/1018/1020/1025 HR
- 2) HEAT TREAT: N/A
- 3) FINISH: N/A
- 4) TOLERANCES: X.X = +/- 0.1" / +/- 1°

X.XX = +/- 0.01" / +/- 0.5°  
X.XXX = +/- 0.005" / +/- 0.1°  
X.XXXX = +/- 0.0005" / +/- 0.05°

PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"

- 5) UNITS: INCHES UNLESS OTHERWISE NOTED
- 6) REMOVE ALL SHARP EDGES AND BURRS
- 7) IDENTIFICATION: N/A

**SEE ATTACHED DEVIATION**

DESIGN	VM	<b>DART AEROSPACE LTD</b>	
DRAWN	VM	HAWKESBURY, ONTARIO, CANADA	
CHECKED	VM	TOOL PART #	REV H
MFG. APPR.	DP	RBW0905G00134-3G-01	SHEET 27 OF 27
APPROVED		TITLE	SCALE
		TOW DOLLY TONGUE ASSY	NTS 
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Entered: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. \_\_\_\_\_

Route update only ☐

Job: _____  Part No. <u>RBW0905G00134-</u> <u>3G-01 REV. H</u>	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/>	<b>DEPARTMENT/PROCESS</b>  <div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/>            Machining <input type="checkbox"/>            Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/>            Small Fab <input type="checkbox"/>            Finishing <input type="checkbox"/> </div> <div>           Eng. (Non-AW) <input type="checkbox"/>            Prod. Eng. Coord. <input type="checkbox"/>            Rec/Store/Packaging <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/>            Water Jet <input type="checkbox"/>            Supplier Quality <input type="checkbox"/> </div> </div>			
Date : <u>2019-05-14</u>	Sequence #:	QTY Affected :		MRB (QSI042) 	
<b>Description Work Order Deviation</b>		<b>Disposition</b>		<b>Completed By</b>	
- ITEMS -16, -17 AND -18 CAN BE MADE OUT OFF ALUMINIUM 6061  - ASSY -15 NEED TO BE POWDERCOAT YELLOW QSI005 OR MIL-PRF-24712		-THIS DEVIATION IS ACCEPTABLE TO USE AS IS  -FIT, FORM AND FUNCTION WILL BE AS ORIGINALLY INTENDED		Lead hand / Supervisor   QC / QA Coordinator	
<b>Root Cause</b>  <div style="display: flex; flex-direction: column;"> <div>Operator <input type="checkbox"/></div> <div>Manufacturing Process <input type="checkbox"/></div> <div>Equip/Tooling <input type="checkbox"/></div> <div>Handling/Presservation <input type="checkbox"/></div> <div>Material <input checked="" type="checkbox"/></div> <div>Product Improvement <input type="checkbox"/></div> <div>Process Improvement <input type="checkbox"/></div> <div>Human Factors <input type="checkbox"/></div> </div>		<b>FAULT CATEGORY</b> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 33%;"> <input type="checkbox"/> Pressure/Forced  <input type="checkbox"/> Bending  <input type="checkbox"/> Crushing  <input type="checkbox"/> Cracks  <input type="checkbox"/> Crimp/Kink/Ripple/Wave/Twist  <input type="checkbox"/> Marks/Chatter  <input type="checkbox"/> Mislabeled         </div> <div style="width: 33%;"> <input type="checkbox"/> Contamination  <input type="checkbox"/> Misaligned/off center  <input type="checkbox"/> BOM/Route  <input type="checkbox"/> Broken/Damage/Defect  <input type="checkbox"/> Incomplete/Unclear Instructions  <input type="checkbox"/> Drill Holes  <input type="checkbox"/> Fit/Function         </div> <div style="width: 33%;"> <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Folio/Program  <input type="checkbox"/> Grain Direction  <input type="checkbox"/> Weld  <input type="checkbox"/> Wrong Stock Pulled  <input type="checkbox"/> Out of Sequence  <input type="checkbox"/> Off-set/Set-up         </div> <div style="width: 33%;"> <input type="checkbox"/> Positioned Wrong  <input type="checkbox"/> Outside Tolerance  <input type="checkbox"/> Drawing  <input type="checkbox"/> Finish  <input type="checkbox"/> Part Lost/Missing  <input type="checkbox"/> Misread         </div> </div>			
		Other/Details:			



Entered: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. \_\_\_\_\_

Route update only ☐

Job: _____  Part No. <u>RBW0905G00134-3G-01-15 REV H</u>	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/>	<b>DEPARTMENT/PROCESS</b>  <div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/>            Machining <input type="checkbox"/>            Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/>            Small Fab <input type="checkbox"/>            Finishing <input type="checkbox"/> </div> <div>           Eng. (Non-AW) <input type="checkbox"/>            Prod. Eng. Coord. <input type="checkbox"/>            Rec/Store/Packaging <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/>            Water Jet <input type="checkbox"/>            Supplier <input type="checkbox"/>            Quality <input type="checkbox"/> </div> </div>		
Date : 2019-06-10	Sequence #:	QTY Affected :		<b>MRB (QSI042)</b> 
<b>Description Work Order Deviation</b>		<b>Disposition</b>		<b>Completed By</b>
WAS : FINISH POWDER COAT YELLOW, MASK HOLES PRIOR TO POWDER COAT  IS : DUAL FINISH = CLEAR ANODIZE = POWDER COAT YELLOW , MASK HOLES AND DIAMETER 2.790" (ON -17)		THIS DEVIATION IS GOOD TO USE AS IS  FIT FOR AND FUNCTION WILL BE AS ORGINALY INTENDED		<b>Lead hand / Supervisor</b>
				<b>QC / QA Coordinator</b>
<b>Root Cause</b>		<b>FAULT CATEGORY</b>		
<div style="display: flex; flex-direction: column;"> <div>Operator <input type="checkbox"/></div> <div>Manufacturing Process <input type="checkbox"/></div> <div>Equip/Tooling <input type="checkbox"/></div> <div>Handling/Presservation <input type="checkbox"/></div> <div>Material <input type="checkbox"/></div> <div>Product Improvement <input type="checkbox"/></div> <div>Process Improvement <input type="checkbox"/></div> <div>Human Factors <input type="checkbox"/></div> </div>		<div style="display: flex; flex-wrap: wrap;"> <div style="width: 33%;"> <input type="checkbox"/> Pressure/Forced  <input type="checkbox"/> Bending  <input type="checkbox"/> Crushing  <input type="checkbox"/> Cracks  <input type="checkbox"/> Crimp/Kink/Ripple/Wave/Twist  <input type="checkbox"/> Marks/Chatter  <input type="checkbox"/> Mislabeled         </div> <div style="width: 33%;"> <input type="checkbox"/> Contamination  <input type="checkbox"/> Misaligned/off center  <input type="checkbox"/> BOM/Route  <input type="checkbox"/> Broken/Damage/Defect  <input type="checkbox"/> Incomplete/Unclear Instructions  <input type="checkbox"/> Drill Holes  <input type="checkbox"/> Fit/Function         </div> <div style="width: 33%;"> <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Folio/Program  <input type="checkbox"/> Grain Direction  <input type="checkbox"/> Weld  <input type="checkbox"/> Wrong Stock Pulled  <input type="checkbox"/> Out of Sequence  <input type="checkbox"/> Off-set/Set-up         </div> <div style="width: 33%;"> <input type="checkbox"/> Positioned Wrong  <input type="checkbox"/> Outside Tolerance  <input checked="" type="checkbox"/> Drawing  <input checked="" type="checkbox"/> Finish  <input type="checkbox"/> Part Lost/Missing  <input type="checkbox"/> Misread         </div> </div>		
Other/Details:				